

Vol 2

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# CITY GOVERNMENT

## FEATURES

JANUARY, 1897.

### SYRACUSE CITY HALL RING:

A story of municipal corruption, implicating a number of aldermen and several others.

### PUBLIC WORKS OF LAST YEAR:

City engineers tell of the character, extent and cost of public improvements made under their supervision.

### COLLECTION AND DISPOSAL OF GARBAGE:

Dr. W. P. Munn, Denver's health commissioner, contributes an interesting article on this important subject.

### MILWAUKEE PAVING REPORT:

Recommendations of a special council committee after a thorough investigation of paving materials and methods.

### CAR TRACKS AND PAVEMENTS:

James Owen, C. E., treats the subject of car track construction on paved streets.

### PUBLIC WORK METHODS:

Charles Carroll Brown, C. E., tells of the duties, methods and responsibilities of departments of public works.

### MUNICIPAL FINANCE:

Statements from a number of important cities showing their financial conditions; also appropriations made for 1897.

### A SUPPRESSED VETO MESSAGE:

Exclusive publication of a veto message by Mayor Broatch, of Omaha, which was suppressed by local newspapers.

### Departments:

Fire and Police—Taxes and Finance—Light and Water  
Public Improvements—Schools and Libraries—Parks  
and Boulevards—Public Health—Purely Personal.

A Monthly Magazine  
devoted to the  
Practical Affairs  
of Municipalities

# CITY GOVERNMENT

IS RECOGNIZED AS AN AUTHORITY ON MUNICIPAL AFFAIRS.  
WE HAVE HUNDREDS OF LETTERS LIKE THESE:



*Mayor's Office*

*George B. Swift,  
Mayor.*

December 26th, 1896.

City Government Publishing Co.,  
150 Nassau St., New York.

Gentlemen:-

I have with much interest studied the articles appearing from time to time in "City Government" in which municipal affairs are discussed- and have gleaned much that has been beneficial to me in meeting and solving civic problems.

Success to the journal, may it continue to prosper.

Respectfully,

*G. B. Swift*



*City of Louisville  
Office of The Mayor*

*Louisville, Ky., Dec. 29, 1896.*

Mr. B. F. Gilkison, Pres.

City Government Publishing Co.

150 Nassau Str.

New York City.

Dear Sir:-

It affords me pleasure to say a word in behalf of your excellent paper. It has been very helpful in the conduct of municipal affairs, and I appreciate it accordingly. I consider it one of the most valuable helps obtainable in the United States, and is an authority on all matters with which it deals. The information and the practical suggestions published in each issue of the paper, if properly applied will be of great practicable benefit to the Mayor, as well as to the community over which he presides.

Yours very truly,

*Geo. J. Fidd*  
Mayor.



*Henry P. Ford,  
Mayor.*

*Pittsburgh, Pa. Dec. 2nd, 1896*

*C. F. Gilkison, Esq.  
City Government Publishing Company  
New York*

*My Dear Sir*

*It gives me great pleasure to be able to say that your publication called "City Government" is highly interesting and instructive with regard to all matters pertaining to Municipalities all over the U. S. and it must hence be quite valuable to City and other Officials, in their varied Departments - I have no hesitation in recommending it to them for their consideration.*

*Very truly yours  
H. P. Ford  
Mayor*



*JAS. M. JONES,  
Mayor.*

*Nov. 2nd, 1896*

City Government Publishing Co.,

150 Nassau St.,

New York.

Gentlemen:-

Your "City Government" strikes a responsive chord in all who are interested in the great and grave problem of municipal government. It is splendidly edited, treating in a masterly manner the questions it discusses. Its scope of usefulness is large, and as an educator it can scarcely fail to accomplish great and good results.

The problem of city government is a business proposition, and your magazine will doubtless materially assist in its proper solution.

Yours truly,

*Jas. M. Jones*  
Mayor.



# CITY GOVERNMENT.

(Entered as Second Class Matter at the New York, N. Y., Post Office, August 12, 1896.)

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\$3 A YEAR.



JAMES D. PHELAN, MAYOR OF SAN FRANCISCO.

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## PUBLIC WORKS OF LAST YEAR.

CITY ENGINEERS REPORT ON EXTENT, CHARACTER, AND COST OF PUBLIC IMPROVEMENTS  
MADE UNDER THEIR DIRECTION.

## NEWARK, N. J.

Ernest Adam, engineer of the board of street and water commissioners of Newark, N. J., reports the extent and cost of street and sewer improvements ordered by the board and performed during the year 1896, as follows:

STREET PAVING.			
Kind.	Miles.	Sq. Yards.	Cost.
Sheet asphalt,	7.05	144,988	\$104,117.96
Brick,	1.96	30,907	74,154.38
Granite on concrete,	1.17	18,300	47,682.00
Granite on sand,	3.06	67,325	147,874.30
Telford,	0.88	8,279	5,401.20
Total,	13.52	269,599	\$278,679.84

Prices per square yard.			
	1896	1895	
Sheet asphalt, 6-in. concrete, 1½-in. binder, 2-in. asphalt.....	\$2.58	\$2.70	
Sheet asphalt, 5-in. concrete, 1½-in. binder, 2-in. asphalt.....	2.54	2.67	
Granite, 6-in. concrete, sand filling in joints.....	2.18		
Granite, 6-in. concrete, gravel and tar.....		2.75	
Granite, sand.....	1.82	2.08	
Brick, 6-in. concrete, cement grout in joints.....	2.15	2.22	
Brick, 6-in. concrete, tar filling joints.....	2.29		
Brick, 6-in. concrete, sand filling joints.....	2.14		
Trap block, sand.....		1.92	

The price per square yard for pavement includes all the necessary excavation and removal of soil, old paving, if any, condemned curb and bridge-stone. All of the materials, excepting the soil, belong to the city and must be carted to the city's yard without extra compensation.

Grading and Curbing.—1.98 miles of street cost \$19,299.90.

Flagging Sidewalks.—1.28 miles of street cost \$5,999.12.

Total amount expended for street improvements, subject to assessments, \$703,978.86.

Sewers.—Brick, 1,097 feet; pipe, 26,765; total, 27,862 feet or 5.29 miles; at a cost of \$30,400, including 40 catch basins and 175 manholes.

Rank of Pavements.—Granite for durability; asphalt, sanitary conditions and smoothness; brick; Telford or macadam.

## ALLEGHENY, PA.

Robert McAfee, director of public works of Allegheny, Pa., reports that during the past year there were 26 sewers built, the total length of which was 2.8 miles. The largest was eight feet in diameter and the smallest fifteen inches. The total cost of all these was \$42,795.95.

It was in paving streets that the greatest showing was made, and more work was done in this line than any year in the history of the city. Altogether, forty-nine streets were improved, thirty-five being repaved and fourteen graded and paved. East Ohio street was paved with ligonier block for nearly a mile; Cedar avenue, with sheet asphalt; Lacock street, asphalt; Downing street, vitrified brick; Esplanade, ligonier block; Fayette street, asphalt; Pine street, ligonier block; Lowrie street, ligonier block; Hamilton street, vitrified brick; Fulton street, asphalt for a distance of 2,763 feet and ligonier block for 649 feet; Juniata street, asphalt; Nixon street, asphalt; Federal street, ligonier block; River avenue, Congress street, Charles street, ligonier block; Buena Vista, Palo Alto, East Diamond, West Diamond, North Diamond,

asphalt; Howard street, ligonier block; Alpine avenue, vitrified brick; Adams street, Ann street, Avery street, Erie street, Taylor avenue, asphalt; Madison avenue, ligonier block; Middle street, asphalt; Island avenue, granite block. The total length of the streets repaved was 49,817.2 feet, or nearly 9½ miles. The total cost was \$254,523.11.

The improvements which contribute more to the value of outlying property than others were the opening, grading and paving of new streets. The following is a list of the new streets, with the length, material and cost: George alley, 274 feet, vitrified brick, cost \$575.94; Neeb alley, 150 feet, vitrified brick, cost \$287.38; Linden avenue, 1,374 feet vitrified brick, 181 feet ligonier block, cost \$17,689.87; Bank street, 214 feet, sheet asphalt, \$1,975.37; Ley street, 1,050 feet, vitrified brick, \$5,690.17; Sas-safras lane, 344 feet, vitrified brick, \$1,824.04; Cross alley, 165 feet, vitrified brick, \$512.03; Park View avenue, 572 feet, vitrified brick, \$3,880.57; Branch street, 278 feet, vitrified brick, \$1,710.51; Frazier street, 430 feet, ligonier block, \$2,783.93; Perrysville avenue, 14,304 feet sheet asphalt, 3,617 feet ligonier block, \$367,508.16; Royal street, 503 feet, ligonier block, \$8,314.05; Meade street, 598 feet, vitrified brick, \$4,209.30; Overhill street, 290 feet, vitrified brick, \$1,794.52. Total length, 24,346 feet, or 4.6 miles. Total cost, \$418,755.84.

It will be noticed that in the kind of paving used considerable vitrified brick has been laid. This has been found very satisfactory for a cheap material where a smooth pavement is desired and the thoroughfare is little used.

Summing up the total miles of streets paved and repaved during the year, it will be seen that over fourteen miles of thoroughfare have been put in first-class condition at a total outlay of \$673,278.95. In the total number of streets improved twenty-one have been paved with asphalt, which, added to those paved with the same kind of material in past years, gives Allegheny miles of beautiful, smooth streets, which will last for many years to come.

## ALBANY, N. Y.

Horace Andrews, city engineer of Albany, N. Y., reports the paving work done in that city during 1896 as follows: Cobblestones removed, 87,636 square yards; granite blocks laid, 26,729 square yards; vitrified bricks laid, 72,851 square yards; macadam, 16,548 square yards. Total area of new pavement, 116,128 square yards.

No asphalt has been laid for several years, and with one exception asphalt has exceeded \$3 per square yard in cost. The cost of granite blocks laid in 1896, on a six-inch concrete base and with all the joints filled with a grout of equal parts of sand and Rosendale cement, without guarantee, was \$2.85 per square yard on the average.

The cost of vitrified bricks, laid on six inches of concrete, with the joints filled with a grout of equal parts of



Portland cement and sand, was \$1.85 per square yard on the average. The bricks used here were the Catskill shale, which were promptly delivered by water in large quantities, and the use of which undoubtedly lessened the cost of this pavement. The brick pavement is wearing very well and is received with much favor. The difference in comfort from the use of bricks is very great, and all the traffic will forsake the granite-paved streets in favor of those paved with bricks. The brick pavement is all laid under a guarantee of maintenance of five years. There is about twice as much asphalt as brick in this city, and much of it is very bad and needs resurfacing. The guarantee contracts amounted to very little, and they have nearly all expired at the present time.

The aggregate length of paved streets in the city, as deduced from the area and based on an average width of carriageway of thirty-six feet, is as follows: Cobblestones, 23.31 miles, or 37.40 per cent. of the whole; granite, 23.36 miles, or 37.50 per cent.; stone not granite, 1.18 miles, or 1.90 per cent.; macadam, 2.60 miles, or 4.17 per cent.; asphalt, 7.76 miles, or 12.44 per cent.; vitrified bricks, 4.11 miles, or 6.59 per cent. The entire length of paved streets is 62.32 miles.

During 1896 \$310,564.98 were expended on street pavements, curbing and sidewalks. During the last eleven years the entire amount has been \$2,012,220.10. Most of the paving in the city consists in the repaving of streets already paved with cobblestones. The curbing used is generally granite measuring six inches in width by twelve inches deep. This is laid on a bed of concrete six inches deep and the old curb being reset twelve inches back of the face of the new; the space between them is then filled with concrete. The curb thus set is very substantial and preserves its grade and alignment very well. The curb has cost from \$1.50 to 45 cents per lineal foot, laid. That laid last year, about eight miles, cost about 50 cents per foot on the average.

At the present time the brick pavement is regarded with most favor; it is cheapest in first cost, is under a guarantee of maintenance of five years, gives a better foothold to horses on our steep streets, is regarded as the best surface by the wheelmen, and above all it can be repaired, if necessary, or entirely resurfaced with other bricks at a moderate cost and without calling upon stock companies for their assistance, with the use of patent heaters, etc., as in the case of asphalt.

#### KANSAS CITY, MO.

Henry A. Wise, city engineer of Kansas City, Mo., writes: I will briefly state that we have done the following amount of paving during the year of 1896: 190,000 square yards of asphalt on concrete, of which amount 170,000 yards has been laid with Trinidad Lake asphalt by the Barber Asphalt Paving Co., and 20,000 yards with American asphaltic rock, from the Indian Territory, by the Gilson Asphaltum Co.; 60,000 yards of vitrified brick on concrete; 127,000 yards of macadam, top dressed with either crushed gravel or bank gravel.

Our Trinidad Lake pavements have cost us about forty cents per square yard less this year than last, prices now

ranging from \$2 to \$2.15 per square yard for 1½-inch wearing surface on 1½-inch asphaltic binder on 4-inch cement concrete, against an average of \$2.50 last year; also from \$2.25 to \$2.30 for 2-inch wearing surface on 1½-inch binder on four inches of concrete, against an average of \$2.65 last year. Rock asphalt of 2-inch wearing surface direct on six inches of concrete is being laid for \$2 per square yard.

Very generally the four inches of concrete has been used to "build up" old concrete already in place, as we have been repairing a number of streets which were originally paved with cedar blocks. Some few residence streets have called for only four inches of concrete; but the opinion of the board of public works and the city engineer is against the use of concrete less than six inches in thickness on new work, and that opinion will be adhered to in the future.

Our brick pavement on 2-inch sand cushion on six inches of concrete, with Portland cement grout, ranges from \$1.60 to \$1.65 per square yard. Brick pavements heretofore put down have not given satisfaction, owing to the fact that the brick were not "tough" enough. We think we have secured a little better quality this year.

Macadam pavements, consisting of eight inches of broken rock with 4-inch top of crushed or bank gravel, is being laid for about \$1 per yard.

Prices on brick and macadam streets are a shade lower than in 1895. We require a guarantee of maintenance of five years on asphalt, stone and brick pavements.

Asphalt streets give the best satisfaction to our people, and, in my own opinion, are preferable in a great many respects to those laid with other material. For streets exceeding six per cent. in gradient stone blocks or beveled brick secure a better foothold for horses and are recommended on that account. We constructed no wooden pavements during the year and none of stone.

We now have 36 miles of asphalt street, 18½ miles of brick, 18 miles of macadam, 2¼ miles of stone blocks and 18 miles of cedar blocks. The latter material will doubtless be replaced within the next year or two with asphalt and brick. The year just past has witnessed more activity in the way of public improvements than its predecessor, and from present indications a large amount of work will be done the ensuing year.

#### PROVIDENCE, R. I.

J. Herbert Shedd, city engineer of Providence, R. I., reports that during the year 1896 there have been laid in that city 18,459 square yards of granite blocks on a 6-inch layer of American cement concrete foundation and the joints filled with pea gravel and paving cement; 9,385 square yards of Trinidad Lake asphalt on a Portland cement concrete foundation six inches deep.

In streets of heavy traffic the granite block pavement, laid as stated above, has proved the best thus far. The Trinidad Lake asphalt probably ranks next, although the test in Providence dates back only to 1894, when the first properly mixed asphalt pavement was laid, the sheet pavement heretofore laid being a mixture of coal tar and asphalt. Commencing with 1881, about 13,496 square yards had been laid to 1896, but during the past year

2,176 square yards have been replaced with regular Trinidad asphalt mixture.

Next to sheet asphalt is the vitrified brick, laid on a 6-inch concrete foundation and the joints filled with paving cement. A few yards of this pavement was laid as a test in a street having as heavy and constant traffic as any street in the city. Five years transpired before repairs were made.

The granite block pavement was laid last year by day work and is estimated at about \$3.25 to \$3.50 per square yard. The asphalt pavement was laid by contract at \$2.45 per square yard. There has been no brick pavement laid during the past year; the last contract for this work was let at \$2.49 in 1894.

#### KANSAS CITY, KAS.

C. A. Ellis, city engineer of Kansas City, Kas., submits the following report of public work done in that city during 1896:

	Lin. ft.	Sq. yd.	Cu. yd.	Total cost.
Brick paving,	11,980	44,324		\$52,111.82
Curb, natural stone,	6,032			2,654.08
Curb, artificial stone,	23,545			11,598.15
Grading,			79,725	10,661.05
Sewers,	13,492			36,659.51
Bridges, viaducts and repairs,				13,548.70
Sidewalks, brick,	3,629			1,177.70
Sidewalks, plank,	11,956			2,964.33
Total,				\$131,375.34

In the 44,324 square yards of brick paving are 6,761 square yards of brick paving, with Murphy grouting, at \$1.42 per square yard; deducting this amount it gives an average cost of the brick paving, on a 4-inch concrete foundation without grouting, for the year 1896, of \$1.13. For 1895 the average cost for the same brick was \$1.22, and for 1894, \$1.27.

I consider brick paving the best and cheapest for this city. We have about 20,000 yards of lake asphalt, put down about eight years ago, which is not in very good condition. A five-year guarantee only was given and the pavement was in good condition as long as the guarantee lasted. We have several hundred thousand yards of cedar block paving, which in the next two or three years will be displaced by brick.

#### PEORIA, ILL.

A. D. Thompson, city engineer of Peoria, Ill., writes: More paving work was done here the past season than ever before in the history of the city. This work was confined to single-course brick on a broken stone concrete foundation, and asphalt pavements on the same foundation.

There were laid 5.96 miles of pavements, consisting of 2.31 miles of asphalt and 3.65 miles of brick. The prices were as low as the work has ever been done in the city. Single-course brick, on a 6-inch broken stone concrete foundation, with 2-inch sand cushion, cost from \$1.32 to \$1.45 per square yard. Single-course brick, with 8 inches of concrete, costs \$1.52 per square yard. These prices do not include cost of excavation, nor of curbing, but simply the foundation, sand cushion and wearing surface.

The asphalt pavements, consisting of 2½ inches of Trinidad Pitch Lake asphalt wearing surface, upon 6 inches of broken stone concrete foundation, cost from \$1.84 to \$1.90 per square yard, including excavation. Combined curb and gutter, \$0.77 to \$0.84 per lineal foot.

Asphalt pavements, under the same conditions as above, cost in this city, in 1891, \$2.82 per square yard, and in 1892, \$2.79 per square yard, while brick paving, consisting of a single course of large paving blocks on a gravel foundation, cost \$1.68 per square yard in 1887, \$1.45 to \$1.60 per square yard in 1890, and \$1.49 in 1893. This construction was abandoned in 1894, all pavements during that season and since being laid upon a concrete foundation.

This city has abandoned the laying of cedar block, cobble-stone, and stone block pavements, limiting such work to brick and asphalt, using brick on the heavy traffic and semi-business streets, with asphalt on the residence streets. I believe that these two pavements, with the addition of granite for streets with heavy traffic in the larger cities, all being laid upon a concrete foundation, will give the best satisfaction of any pavements now in use.

#### RICHMOND, VA.

W. E. Cutshaw, city engineer of Richmond, Va., writes: We use principally for our paved streets rubble granite, which is very desirable and makes an excellent road-bed. We have some of our streets paved with Belgian blocks. Most of our sidewalks are laid with good, hard-burned bricks, but the granolithic paving is rapidly taking its place.

The prices for stone paving vary according to location, with about an average of 65 cents per square yard for 1896, as compared with an average of about 88 cents per square yard for 1895. On December 21 we made an approximate estimate of the paved streets (road-bed paving) which is 21.10 miles.

#### TROY, N. Y.

Martin Schenck, city engineer of Troy, N. Y., reports work done by his department during 1896 as follows:

Bridges.—During the past year the Rensselaer street bridge has been completed and was thrown open to traffic June 1. The contract for this work was let in July, 1895, and the substructure was completed in that year, but almost the entire erection of the superstructure and completion of the approaches were the work of the present year. On October 13 a contract was let to construct and concrete a steel arch over the Wynantskill on the Campbell highway, and the work is at this time about half completed. The bridge is to have, when completed, a clear span of 65 feet and a total length of 80 feet, with a width of 30 feet. The Second street bridge over the Poestenkill has been entirely replanked during the past year, and all bridges in the city are now in a good state of repair.

Paving.—The table on the opposite page shows the work done in this line.

Sewers.—Pipe sewers have been put down in the following streets: First, from Tyler to Harrison; Brunswick avenue, from Tibbits avenue to Highland avenue; Walnut street, from Congress, across lands of Warren estate, to



STATEMENT SHOWING NUMBER OF YARDS AND PRICES OF SEVERAL KINDS OF PAVEMENT LAID IN THE CITY OF TROY, N. Y.,  
DURING THE SEASON OF 1896.

NAME OF STREET.	Number of blocks paved.	KIND OF PAVEMENT LAID.	Number of square yards laid.	Price per yard including grading.	Average price in previous years.	REMARKS.
State Street.....	2	Granite on sand, cement filled joints.	794	\$1 98	\$2 55	Joints filled with sea gravel and Portland cement grout.
Broadway.....	2	Granite on sand, cement filled joints.	675	1 99	2 55	Joints filled with sea gravel and Portland cement grout.
Federal Street.....	1	Granite on sand, cement filled joints.	578	2 03	2 55	Joints filled with sea gravel and Portland cement grout.
Vanderheyden Street.....	2	Granite on sand, cement filled joints.	1,442	1 90	2 55	Joints filled with sea gravel and Portland cement grout.
Short King Street.....	1	Asphalt blocks on 6 inches concrete.	1,012	3 16	.....	None laid in this city prior to this season.
Seventh Street.....	1	Asphalt blocks on 6 inches concrete.	1,396	3 16	.....	None laid in this city prior to this season.
Sixth Avenue.....	1	Fire-clay brick on 6 inches concrete.	251	1 93	2 30	Mack fire-clay block.
Fulton Street.....	1	Fire-clay brick on 6 inches concrete.	979	2 19	2 30	Mack fire-clay block.
First Street.....	10	Sheet Asphalt on 6 inches concrete.	20,100*	2 50	3 20	Pavement condemned and ordered taken up and relaid.

\*On the last named street 14,885 square yards of concrete and 12,085 square yards of asphalt surfacing were laid. This surfacing did not prove satisfactory and was condemned, and will be taken up and resurfaced in the Spring with some standard asphalt.

Cypress street; Tenth street, from Eagle to Jacob; Marshall street, from Walnut to Chestnut street; Sheldon avenue, from Pawling avenue to Tamarack avenue. All of the foregoing were let and completed during the past season. A brick sewer, varying in size from a 63-inch circular sewer to a 26 $\frac{3}{4}$ x40-inch egg-shaped one, has been laid in Mill street, Campbell highway, Burden Iron, and over the lands of the Burden Iron Company to the river, a distance of more than one mile. This sewer is completed except about 300 feet of the 26 $\frac{3}{4}$ x40-inch, which cannot be done until such time as the grading on the Campbell highway, from Sherman avenue to Thomas street, shall be completed. When finished this sewer will have cost about \$22,000.

Considerable grading, sidewalk and other work was also done.

SPRINGFIELD, MASS.

Charles M. Slocum, city engineer of Springfield, Mass., reports 1896 paving work as follows:

Street.	Kind.	Sq. Yds.	Cost.
Worthington street ....	Vitrified brick	2,544	\$5,965.49
Dwight street.....	"	9,905	23,996.83
Main street.....	"	8,307	18,531.44
Harrison avenue.....	Sheet asphalt	2,247	6,151.06

All the above pavements laid on a 6-inch concrete base. Syracuse, N. Y., vitrified brick used on Worthington, Dwight and Main streets. We have never before contracted for paving work, but last season Harrison avenue and Main street were paved by contract; all other work by the city. We are much pleased with the Syracuse brick for a paving material. We have never used asphalt here until the year just finished. Our granite block pavements are somewhat in disfavor as compared with smoother pavements.

MILWAUKEE, WIS.

City Engineer George H. Benzenberg, of Milwaukee, reports that during the year 1896 nearly five miles of pavement has been laid and eighteen miles of street roadways, sidewalks and gutters improved by grading and surfacing with crushed stone and gravel. Forty-nine miles of stone curbing has been put in. The aggregate cost of these street improvements has been \$369,231.03, of which sum \$277,186.56 was borne by the abutting property and the balance paid out of the ward funds. Fourteen miles of brick and pipe sewers have been added to the public drainage system at a cost of \$170,379.19, and fifteen and three-quarter miles of additional water mains laid. The total length of paved streets in the city is now over seventy-three miles, of which fifty-nine miles are of wood, nine miles of stone and five miles of asphalt, granite or brick, laid on a permanent concrete foundation. The length of roadways improved with crushed stone and gravel is 301 miles. The total cost of the street pavements of Milwaukee up to December 31, 1896, has been \$2,279,618, of which \$152,828 represents the expenditure during 1896. The cost of other existing street improvements is not on record, for the reason that in earlier days they were done to a large extent by private contract with the owners of lots.

The surface area of street pavement laid during the

year is 128,684 square yards, divided as to material as follows:

Cedar block.....	73,890 square yards
Asphalt.....	33,939 square yards
Granite.....	19,300 square yards
Vitrified brick.....	1,555 square yards

The asphalt, granite and brick pavements laid in 1896 have all been constructed with a foundation of cement concrete from five to seven inches in thickness. The cedar block pavements are supported by a floor of two-inch plank.

An unusual amount of stone curbing has been put in during the last two years, under the stimulus of extremely low prices for the material and labor and a desire on the part of the city officials to have the unsightly and perishable plank curbing replaced as rapidly as possible with durable work. The specifications for stone curbing require the pieces to be four inches in thickness, two feet in depth and not less than four feet in length. The top edge and face is dressed. This curbing, set in place, has been supplied during part of the year at the low price of 32 cents a lineal foot, and the average cost has been only 34 cents. The total length laid in 1895 was 279,463 feet, or 53 miles, and in 1896 was 257,570 feet, or 48 $\frac{3}{4}$  miles.

Nearly fourteen miles of public sewers were put in during the year. The most extensive work now progressing in this department is the Thirtieth street tunnel, which is ten feet in diameter and is designed ultimately to drain a territory about six square miles in area in the northwest part of the city. About one mile of this great conduit has been completed. Another extensive and costly sewer under construction is the five-foot tunnel paralleling the river in the Eighteenth ward, under the line of Cambridge avenue extended. The following table exhibits the extent and cost of the work during the year:

	Brick (feet).	Pipe (feet).	Cost.
East district.....	120	16,940	\$19,785 12
West district.....	13,433	23,939	116,308 32
South district.....	4,499	10,081	28,495 53
Bay View district.....	45	4,659	5,790 22
Total.....	18,097	55,593	\$170,379 19
Total, brick and pipe, 73,690 feet, or 13 956-1,000 miles.			

Of the total cost of sewer construction, amounting to \$170,379.19, there was assessed against private property as benefits the sum of \$55,145.26, and paid from the sewerage district funds \$109,145.43. The cost of inspection was \$6,153.50.

At the close of the year 1895 there were 293.162 miles of water pipes in the distribution system. To this has been added in 1896 60,771 feet of six-inch, 10,410 feet of eight-inch, 6,421 feet of twelve-inch and 5,458 feet of sixteen-inch iron pipe, a total of 83,030 feet, or 15.726 miles. The aggregate length of the entire main distribution system is now 308.888 miles. There were eighty-eight new hydrants put in in 1896, making 2,262 now in use.

CITY GOVERNMENT is a new and deserving periodical containing much of value to those interested in municipal affairs.—From an editorial in the *Utica Daily Press*.

## COLLECTION AND DISPOSAL OF GARBAGE.

BY WM. P. MUNN, M. D., HEALTH COMMISSIONER OF  
DENVER, COLO.

The problem of collection and disposition of vegetable and animal refuse from the kitchen constitutes one of the urgent and unsolved problems of city sanitation. Urgent, in the sense that it is ever present and constantly increasing as the city grows in size; unsolved, in the sense that a permanent solution does not seem to have been discovered that will apply equally well to all cities at all times. The methods in use in various communities vary according to the location, size, topography of the city and the liberality of the appropriations made for the purpose. One city dumps such refuse into the sea and expects the ocean currents and the tides to dispose of it; another dumps it into the nearest water-course to be disposed of by the current, frequently to the detriment of the nearest community farther down the stream; another dumps it on unoccupied ground where it is plowed under and covered by fresh earth; another burns it in some kind of a furnace, while still another allows it to be used for feeding hogs. The desirability of any or all of these methods depends upon the local conditions and the economy with which each can be carried out.

As a preliminary to the consideration of the subject, it seems to me proper to call attention to the fact that practically all of the methods take for granted that the municipality should do the work, either because such acceptance of responsibility by the municipality is more convenient or more economical. It seems idle to call attention to this, but the fact is that in this lies the great difficulty of the whole problem. The city assumes the responsibility of keeping clean premises which should be kept clean by their occupants; it assumes the work of disposing of filth which should be disposed of by the households in which it originates, and in so far as the city encourages householders to assume that the problem of keeping clean is not a personal one and entails no personal responsibility upon themselves, the city encourages people to be filthy and to throw the responsibility of their filthiness upon the shoulders of others. However, this consideration does not alter the fact that almost all communities agree in placing the responsibility for this matter upon the public officers; we therefore confront a condition, not a theory, and it is useless to argue further that this condition should not exist; it does exist, therefore let us deal with it as best we may.

The problem naturally resolves itself into two minor ones: First, the comparative utility and safety of each of the methods of disposition in use; second, the comparative economy of each method and the items which cost most and which may be modified.

It is evident that disposition by dumping into the sea is both uncertain in its results and suitable to but few communities, and that these must be of small size. When a city reaches any considerable size, the amount of garbage will be so enormous that the tides cannot carry it away completely from the neighborhood, and when they do so, it is simply to inflict the material upon adjacent



seaboard communities of smaller size. Water-course dumping is open to the same objection and to the added one that few cities have any other source of domestic water supply than the river upon which they are situated. The garbage of one city will therefore be not simply an annoyance to cities lower down upon the same water-course, but a source of actual danger by polluting the water supply.

Burning undoubtedly is approved by a majority of sanitary authorities as the ideal method of disposition, both of this and of all other kinds of refuse. The safety of the method is beyond dispute; if operated properly a garbage furnace need not be a source of annoyance to even the nearest neighbors; its practical utility will be dependent simply on the perfection of its construction and the adoption of a proper method of operation. The only objection is that of expense.

The use of garbage either for feeding animals or for enriching the ground is an attempt to follow nature's method's. Exceptional facilities must be provided or the process will result in failure, but if the facilities are adequate the method is unobjectionable and is the most economical of all. That hogs fed entirely upon garbage when it is fermenting or decaying are apt to be unhealthy and that they almost certainly develop hog cholera at certain seasons of the year is the verdict of competent veterinarians. But garbage can be fed to hogs with perfect safety when it is fresh and it need not and should not constitute their sole article of diet. When kitchen refuse can be kept dry, collected every day and conveyed promptly to the ranches where it is used for hog feed, it will have little or no opportunity for fermentation or decay. If, in addition, it is boiled thoroughly before being fed to the hogs, all possibility of harm is removed and it becomes an ideal food-stuff. The use of garbage for animal food then involves (a), the careful storage of dry garbage; (b), the prompt daily collection of same; (c), absolutely reliable supervision of the hog ranches in order to be sure that the garbage is in proper condition before feeding and that it does not constitute the sole article of diet.

The items of expense of any method may be classified under three heads: Collection, haul to place or places of disposition, and disposition.

In all methods which provide for the utter destruction or abandonment of the garbage, it is evident that there will be considerable expense attached to every movement in connection with the collection, hauling and disposition of the material. It is waste material, pure and simple, and cannot be made a source of profit to any one. The only person who should legitimately be made to pay in such a case is the person who is being favored by having his garbage removed, and since the municipality assumes to relieve him of the garbage, it assumes his responsibility and must perforce pay.

However, if the garbage or any portion thereof can be utilized in such a manner as to be valuable to some one, that person to whom it has value will probably be willing to assume all or a portion of the expense either of the collection, the haul, the disposition or of all combined. To those who operate furnaces, the garbage has no value

as a fuel; they must be paid for burning it. To those who operate reduction works it has a moderate value as a fertilizer, but that value is so little that they must be paid for the trouble of collecting and hauling to their plant. To the man who can utilize garbage for food for hogs, it possesses such a definite value that he is willing, as a rule, to collect, haul and dispose of it without remuneration and, in some instances, is even willing to pay a moderate sum for the privilege. Now, if the garbage of a whole city can be *safely* disposed of to those who are willing to do the work for nothing, the saving is so great that the municipal officer is justified in considering the method.

The private rancher can be induced to do the great bulk of the work of collecting garbage without any charge. There will, however, be some items of expense. Competent supervision must be provided. The number of men employed for this purpose will vary according to the size of the city, the reliability of the ranchers in the particular locality and the co-operation that can be obtained from the courts in enforcing penalties for violation of the sanitary regulations.

There will always be districts in every city where the character of the inhabitants modifies the character of the garbage in such a manner as to make it valueless for the purposes of the rancher; in such districts the city must continue to pay for the collection of the garbage. In suburban districts the houses are so scattered as to make a long and unprofitable haul for a small amount of garbage; the city must continue to pay in such districts. But in the centre of the city, where hotels, restaurants and boarding houses are massed together, certain blocks and districts become very valuable to the rancher on account of the "select" grade of garbage obtainable, and such districts are the subject of fierce competition amongst ranchers, some of whom will pay cash for collection privileges in a certain area; others will perform additional service (such as removing ashes), and still others will take an undesirable suburban route in conjunction with a desirable urban route. In all these ways economical service may be secured, but it is easy to see that such economies are more practicable for a private contractor, to whom every cent saved is personal profit, than to a municipality doing the work itself with employes that are often unreliable. This method of garbage collection and disposal is thus shown to have its principal advantage in economy of operation. As a rule it is more readily carried on by a private contractor, but in exceptional cases, when subordinates of reliable character can be secured, the city may conduct it with satisfaction and profit.

The results of experience with several methods in Denver have been most favorable to this method. It is not the ideal one nor would it be the best in every city, but it has worked fairly well with us, and we have saved money in times when money needed to be saved.

In 1889 and 1890 a reduction process was in operation here. It was not carefully conducted and was enjoined by the courts. The garbage was collected from an area of sixteen square miles at a cost approximating \$600 per month and delivered at the works; the contract price for disposal was about \$15,000 per year. Total probable

cost, \$22,000 per year, or about \$1,350 per square mile per year. Population, 106,713.

In 1891 and 1892 the garbage was collected by garbage wagons owned by the city and driven by men in city employ; disposed of by dumping into the Platte river. Cost of collection and disposal, \$18,000 per year, or about \$1,150 per square mile per year. Population, 120,000.

In 1893 and 1894 the garbage was collected and disposed of by a contractor who used the hog ranch methods. His contract was at the rate of \$9,560 per year, or practically \$600 per square mile per year. Population, 135,000.

In 1895 a new contractor using the same methods did the work, covering forty square miles at a contract price of \$4,800 per year, or at a rate of \$120 per square mile per year. Population, 140,000.

In 1896 a new contractor took the work at a contract price of \$3,360 per year for an area of forty-four square miles. She performed the contract unsatisfactorily, and it was taken from her and the work done for the last four months of the year by the hog ranch method, under direct supervision of a competent health inspector, at a total expense of \$865, or at a rate of \$2,600 per year. Territory, fifty square miles. Population, 150,000.

The maximum number of hog ranch garbage wagons holding permits at any one time was sixty-five; the maximum number of wagons employed by the city at any one time during 1896 was five.

In order that there may be no question as to the effect of these methods upon public health, I append a table showing the mortality from typhoid fever, diphtheria and scarlet fever in Denver during the years to which I have made reference:

	Year.	Population.	Typhoid Fever.	Diphtheria.	Scarlet Fever.	Deaths from All Causes.
Hog ranch method in use.	1889...	95,000	188	109	18	1,808
	1890...	106,713	287	277	13	2,530
	1891...	113,874	99	175	18	2,118
	1892...	120,000	64	89	60	1,713
	1893...	125,000	71	106	20	1,734
	1894...	140,000	55	71	51	1,688
	1895...	145,000	43	40	105	1,626
	1896...	150,000	93	19	22	1,570

I am unable to give as definite information as I should like to in regard to the prevalence of hog cholera during the past eight years. The statements of persons familiar with the matter differ; but, so far as I have been able to ascertain, hog cholera is less prevalent in districts adjoining Denver than it was eight years ago.

In conclusion, it must be borne in mind that this method of garbage disposition is not supported as the ideal one or the final solution to the problem of garbage disposition. But it has been permitted in Denver and is now recommended as a method that under strict supervision is a comparatively safe one. It is demonstrated as the most economical one that we have yet tried. It does not commend itself to the sanitarian in the same manner as does disposal by cremation, but rather commends itself as a method of comparative safety and eminently practicable for those times when the available appropriation is small and cannot be increased. If we

cannot do sanitary work in the best possible manner, we must do it in the best manner that the funds at our disposal will permit. That this method has no disastrous effect upon public health is evidenced by the fact that with a rapidly increasing population, a territory that has increased three-fold presents a constantly decreasing death-rate, both in regard to general mortality and the mortality from communicable diseases.

#### MILWAUKEE PAVING REPORT.

Milwaukee finally has a permanent paving ordinance and, hereafter, when any pavement is laid in that city, it must be granite blocks, paving brick or asphalt. A concrete foundation must be provided no matter which of these three kinds of paving material is used. This condition of things in Milwaukee is the result of long and earnest agitation. In a message to the common council, last spring, Mayor Rauschenberger took a pronounced stand in favor of better street paving, and through this and the efforts of Ald. Schranck, who went into the common council with the intention of agitating the matter of street paving until a reform was brought about, a special commission, with Ald. Schranck at the head, was appointed to look into the subject and recommend a policy for the city to adopt. Ald. Schranck went East and inspected the pavements in the principal cities of that section of the country, in which more improved methods are supposed to obtain than is the case in the younger West. He proceeded on the basis that the model pavement should be impervious to water, afford a good foothold to horses, be hard and noiseless, yield no detritus, be easily cleaned, suit all traffic and be adaptable to all grades. The report of the committee was made only after thorough investigation. The first cost of a pavement, it was stated, was of great importance, but it should be considered in connection with the life of the pavement and the cost of maintenance. In Europe the method is to figure the first cost of the pavement, and the cost of maintenance for a period of say twenty years, deduct the value of the pavement at the end of that period, and divide the remainder by the number of years, thus getting the cost per annum. The committee reported that this was the only way to ascertain correctly the relative value of different kinds of pavement. Thus a pavement which costs \$3 a square yard originally, and costs five cents a year per square yard for maintenance for a period of fifteen years, is cheaper than a pavement which costs \$1.50 a square yard originally and has to be replaced at the end of three or four years.

The committee reported that the hardest kinds of granite made a somewhat slippery pavement and that in Cincinnati, for instance, softer granite was being used. In most cities the foundation for granite blocks is from six to eight inches of concrete and the blocks are laid on three inches of sand. The spaces between the blocks are filled with an asphaltic composition to render them impervious to water. This kind of pavement has been found to be practically indestructible.

The committee said a good word for brick pavement, which has already been tested to some extent in Mil-



waukee, where it promises well. In Indiana, Illinois, Iowa, and other states in which brick is manufactured, it makes a cheap pavement, but the freight swells the cost materially when it has to be hauled any great distance. The committee reported that it is certainly an improvement over brick blocks and is especially adapted to steep grades. It should be generally substituted for either material, in the opinion of the committee, on secondary business streets. Its cost varies from \$1.40 to \$1.75 a square yard.

The committee recommended a much greater use of asphalt, especially on residence streets. The report cited the asphalt pavements of New York, Washington and Buffalo, and stated that Chicago, which, like Milwaukee, has been backward in the matter of permanent pavements, is now using asphalt very extensively. The committee found asphalt suitable to all climates, as shown by its use, and stated that it was not any noisier than granite or brick; in fact, the noise made on asphalt pavement consisted of the click of the horses' hoofs, the wagons passing over the pavement almost noiselessly. In Milwaukee the cost of asphalt is about \$2 a square yard for residence streets and about \$2.30 a square yard for business streets. For cleaning asphalt pavement the committee recommended the system by which one man is given charge of from one to three blocks of street and is kept at work removing deposits with a broom, using a wheelbarrow to cart the refuse away. The committee recommended the flushing of asphalt pavement at night, two or three times a week, and prohibiting sprinkling during the day, so as to give bicycle riders and drivers of vehicles no cause for complaint.

In very strong terms the committee condemned the use of wood pavement. A substantial, permanent wood pavement could be made, the committee said, but no city in America would stand the expense of it. The committee admitted that the wood pavements of Paris and London, which have often been cited by Milwaukee opponents of asphalt, give good satisfaction and wear well, but the blocks are treated with creosote to make them rough. They are laid on cement concrete foundations, the interstices are filled with cement and the surface is kept constantly covered with gravel. This kind of wood pavement costs from \$3.50 to \$5 or more a yard. In Milwaukee wooden blocks are laid upon a plank foundation and the cost a square yard is about \$1. But on North Water street, which was paved with cedar blocks about seven years ago, the pavement is in wretched condition, and must be renewed. Eighty per cent. of Milwaukee's pavements is wood and the committee pointed to permanent pavement as one way to bring about lower taxes. The committee was of the opinion that while macadam is desirable for park roads and boulevards, it does not make a good street pavement. It is expensive to lay in the first place, the committee reported; it is expensive to maintain; it is often muddy, and every time it is cleaned part of the pavement is removed. The committee mentioned cobblestone, limestone, etc., only to condemn them. It stated that Milwaukee was paying annually about \$200,000 in keeping up its wood pavements, and that the city would be a great gainer if this sum were invested annually in permanent pavements. The result of the report was the adoption of the permanent paving ordinance.

#### SYRACUSE CITY HALL RING.

A city hall ring of franchise speculators and paving contractors has existed in Syracuse, N. Y., for a number of years. It had its origin in the palmy days when the West Shore Railroad Company, through the influence brought to bear upon a majority of the aldermen (there were then only eight of them), secured from the common council a franchise for the right of way through the very heart of the city. The West Shore franchise is frequently mentioned when the misdoings of the legislative branch of the city government are discussed, and if this transaction still remains fresh in the minds of the taxpayers, the granting of electric light, telephone and subway franchises to Eugene Hughes & Co., in one bunch, in December, 1896, will not be forgotten before next fall, when it is proposed to unite the citizens and taxpayers in



MAYOR JAMES K. MCGUIRE.

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one mighty effort to rescue the city from the clutches of the men whom Mayor James K. McGuire has seen fit to call "birds of prey."

There has been a prolific field for franchise grabbers in the city of Syracuse for the past few years. Because of the apparent indifference and the lack of interest of the better class of citizens in the primary elections, the candidates nominated for aldermen invariably come from a class of ward politicians of unsavory odor in private life, and in most instances their records in the council have condemned them as persons unfit and unworthy of a new lease of public confidence. Through their association with corruptionists they soon become bold and daring and learn to defy the public press and public sentiment. When retired from public life by some unusually powerful wave of popular indignation they realize the error of their

way and learn what was in store for them when they closed their eyes and ears to the interests of the taxpayers, to become the tools of a vicious city hall ring. The officials whose hands are stainless after the perpetration of a franchise deal gain the respect and confidence of the public, and immediately they are in demand for higher offices and positions of larger responsibility.

Take, for instance, the public career of J. B. Kline. He was elected alderman of the Twelfth ward of the city of Syracuse. He championed the cause of the people and opposed every measure having about it the flavor of corruption. A charter election came on, and Mr. Kline, on the strength of his record in the council, was nominated for mayor by a faction of the Republican party, which was then, as now, divided. Although nominated by the minority faction, he made a gallant run, his largest following being among the citizens who were at that time (1893) up in arms against the franchise grant. He was defeated as a candidate for mayor, but was subsequently taken up by the regular Republican organization, nominated for district attorney, and elected by a handsome majority.

Two members of the present board of aldermen, Eugene J. Mack and George Freeman, whose voices have been heard in the council meetings in opposition to the franchise grants, are now mentioned as candidates for mayor. Howard Lincoln, who voted for the franchises as they were originally granted, became conscious of the wrong that was being done the taxpayers and voted with the majority to sustain Mayor McGuire's vetoes of the Eugene Hughes telephone, electric light and subway franchises.

Mayor McGuire's attitude on the franchise question is such as to commend him to the voters, and he is talked of as a possible candidate for re-election on a reform ticket. He is twenty-eight years of age, perhaps the youngest mayor in the United States, and while he has made some political mistakes, it is admitted by his enemies that he has made a record for honesty.



46 FRANK MATTY.

He has fought the city hall ring from the day he entered upon the duties of his office (Jan. 1, 1896) and has waged war upon Frank Matty, a leader in the board of aldermen, until the latter has begun to realize that his chances for re-election as alderman from the third ward next fall are pretty slim.

Matty has never met defeat at the poles. For twelve years he has been a member of the council and the very class of

aldermen who have been voting away valuable franchises, regardless of the city's interests, have just re-elected Matty president of the common council. For several years this same Matty has wielded a greater influence among the aldermen than the mayor.

The history of corruption and franchise grabbing in the

city of Syracuse would fill a large volume. It is only five years ago that a franchise was granted the Onondaga Electrical Company, being passed over Mayor William Cowie's veto. The franchise was sold to the old electric light company and, according to statements made by leading business men in public indignation meetings during the year, the price was \$350,000 in stock and money. The city received not a cent. The Syracuse & Oneida Lake Railway franchise was then secured. This was over two years ago and since then three extensions of the franchise have been granted. It is said that the franchise is awaiting a purchaser.

The franchise grabbers feed off the city. They pay nothing for the valuable privileges obtained from the council. The city has been worked to death and all the franchises worth having have been gobbled up. It is a pity that the reform movement did not start before the city had been stripped of all its franchises. There is now very little, if anything, left for promoters.

William B. Kirk and others obtained a gas franchise a year and a half ago, and when a cash bonus was demanded for it, paid the city \$15,000 and promised the people cheaper gas. This was the only franchise from which the city ever received a dollar. The \$15,000 was small in proportion to the amount divided by those interested. A new plant was to be established. What was the result? The old and the new company became one. No new plant was erected and ever since the good people have complained of their gas bills and demanded an investigation. One of the aldermen, John Regan, was given a position under the gas company and the investigation ceased.

The majority in the council voted down amendments requiring Eugene Hughes & Co. to pay \$50,000 into the city treasury for the electric light, telephone and subway franchises. Six public spirited citizens who came forward and offered to build the subways, turn ten per cent. of the gross receipts into the city treasury annually, and sell the plant to the city at any time for the actual cost of construction, with five per cent. interest added, were ignored. They were not given an opportunity to present their proposition to the council in regular franchise form. The majority passed the Eugene Hughes & Company franchises over the mayor's vetoes, thus giving away privileges worth upwards of \$1,000,000, to the promoters, and then adopted what are alleged to be "fake" amendments providing that the company shall pay into the city treasury annually 15 per cent. of the gross receipts of the subway plant and giving the city the right to purchase the subway plant at any time after two years at a court appraisal. The company also agreed to furnish bonds in the sum of \$50,000 for the faithful performance of the conditions of the subway franchise and a bond of \$30,000 each for the electric light and telephone franchises. The amendments further provided for a revenue of five per cent. each, for the city, from the telephone and electric light plants.

The three original franchises, without a single clause providing any compensation to the city, were first passed over the vetoes and became laws. Then the pretended amendments were presented. It is argued that the



amendments are of no value and the company, it is claimed, can operate under the original franchises. The matter will be carried into the courts and the action of the council investigated. The representatives of the company have not yet accepted the amendments in writing, but they say that they will do so; also that they will file their bonds on Feb. 1, of the current year.

The thirteen aldermen who voted for the franchises are Frank Costello, first ward; W. C. Oswald, second ward; Frank Matty, third ward; James S. Luddington, fourth ward; John Troendle, ninth ward; Michael Walsh, tenth ward; Robert Ballard, eleventh ward; Charles L. Pack, fourteenth ward; John Regan, fifteenth ward; J. C. Oswald (Copper John Oswald), sixteenth ward; John Mahar, seventeenth ward; Dr. O. A. Thomas, eighteenth ward; Edward McLaughlin, nineteenth ward.

The six aldermen who voted against the franchises are Howard Lincoln, fifth ward; Arthur R. Peck, sixth ward; George Freeman, seventh ward; Eugene J. Mack, eighth ward; Charles Soldan, twelfth ward; Joseph A. Griffin, thirteenth ward.

At the beginning of his administration Mayor McGuire opposed the election of Frank Matty as president of the board of aldermen and had a candidate for the position in the person of Howard Lincoln. Matty, it was alleged at the time, secured his election by corrupt means. The mayor also opposed the appointment of James E. Croak as custodian of the city hall, but Matty had already succeeded in forming a combination in the council and Croak was a winner. In the council meeting of March 23, 1896, President Matty attacked Mayor McGuire on the floor of the council for his alleged interference in the appointments of the common council. The "boy mayor," who is known throughout the county of Onondaga as "the silver-tongued orator," was given the privilege of the floor to defend himself, and denounced Matty in most vigorous terms. Addressing his remarks directly to Matty, and coming within arm's length of him, he held the floor for fifteen minutes, and said, among other things:

"The people at the last election wanted to efface Matty and Mattyism. I am against you. Not that I have any personal feeling or dislike for you, but because I hate your political methods. You stand in politics for all that I abhor. You are the direct representative in this body of special interests, favored contractors, and the class who prey on the wants and necessities of the people. You and I can never stand on the same ground. You represent all that is base and I am striving to give the people an honest administration.

"You wanted to be president of the council in order that you could appoint committees—that you might be able to control; in order that you might loot and plunder the town. You, more than any man in public life, have been the agent of the combines for plunder and corruption that have wrecked administration after administration; but you won't wreck mine. You, more than any other man, made failures of the last three administrations. I have not interfered in council appointments save to insist that my administration must not be cursed with men whose political service consists of stuffing ballot-boxes for you. Who is your candidate for custodian? I say he is a ballot-box stuffer.

"I welcome your political hatred because I feel the better man for it, and I throw down the gauntlet at your feet that,

for the remainder of my term, wherever I believe you to be wrong my hand shall be raised against you. Whenever an infamous job is planned to injure the people you are its chief promoter. You represent the class who buy and sell contracts and franchises and are known to be the chief promoter of every scheme which has gone through the council for the past ten years. I do not hesitate to brand you as the incarnation of all that is evil and corrupt in our municipal life. That is my answer to you."

Replying to Matty on April 4, 1896, in a column-and-a-half communication to the press, the mayor said, among other things:

"If I was only to consult my personal comfort, I would sit idly by and permit Matty to run the city hall, effect corrupt combines and auction off contracts and franchises to the lowest bidder. It is a notorious fact that for years past every big steal has been inaugurated in Matty's saloon or in Matty's gambling den. Everybody knows that Matty has been the go-between between the plunderers and the corrupt members of the common council. When a man wants to make money out of the city, he is always run up against Matty. His resort is the rendezvous for these concomitants. He spent more than \$3,000 last fall to get a paltry 400 votes—nearly \$10 per head—to get elected to a paltry \$250-a-year office. That fact alone is sufficient to condemn him."

The mayor then went on to say that Matty was "the John Y. McKane of Syracuse" and that he bought his elections year after year. The fight between Matty and the mayor was kept up in the council chamber for several weeks, Matty taking the floor of the council every meeting night, in order, as he said, to "lambaste" the mayor, likening him to a gutter-snipe or a yellow dog, and calling him a coward and a cur.

#### MAYOR PHELAN OF SAN FRANCISCO.

James D. Phelan, the new mayor of San Francisco, was inaugurated on Jan. 4. In his inaugural address he made many suggestions for the better government of the city, urging improved service and reduced taxation at the same time. His strong condemnation of the lavish manner in which money is expended by public officials is an indication of the economical, business-like administration that he will undoubtedly give to the city of San Francisco.

Mr. Phelan is the first native son of California to occupy the honorable position of Mayor of San Francisco. He has grown up with the great Western municipality, and no one has a better understanding of its charms, possibilities and shortcomings. He certainly is well equipped, by training and education, to bear the great responsibilities that rest with the mayor of San Francisco, and we confidently expect to see him make a creditable record. San Francisco has our congratulations upon securing a mayor of such good qualities; Mayor Phelan has our best wishes for success in his new and exacting position.

—Providence, R. I., is now buying granite paving blocks at \$1.09 per square yard, which is about 50 cents lower than the price paid a couple of years ago.

## DENVER CITY GOVERNMENT.

BY CHARLES W. COCHRAN.

The government of the city of Denver is rather complex in its formation and not always satisfactory in its operation, but, on the whole, has been conducted on a reasonably economical basis.

The city council is composed of two branches: a board of supervisors, consisting of five members, chosen by the entire electorate of the city, and a board of aldermen, consisting of one member from each ward, chosen by the electors of the ward. The president of the board of supervisors is elected by the people, but the president of the board of aldermen is chosen by the members of that body. They are all elected at the same time and some

his record in that body for thorough business methods and insistence on economy in public affairs won for him a nomination and election in the face of a powerful combine. His record as mayor has justified the claims made in his behalf. As mayor, he has the appointment of a large list of city officials, and his appointments have proven satisfactory to the public.

The city clerk is D. H. Allen. He is now serving his first term in public office, and the books and papers of his department are in first-class shape. As city clerk, he is clerk of both the board of supervisors and the board of aldermen.

The city treasurer is E. F. Arthur; a thorough accountant, and the books of the city treasurer's office were never in a better shape than under his administration.



F. A. WILLIAMS, City Attorney.

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T. S. McMURRAY, Mayor.

48



D. H. ALLEN, City Clerk.

49



50 E. F. ARTHUR, Treasurer.



51 PETER O'BRIAN, City Engineer.



52 O. B. SCOBEEY, Supervisor.



53 A. H. PICKENS, Auditor.

for a term of two years. In addition to the city council, the officials elected by the people are mayor, treasurer, auditor, clerk, attorney and engineer. A board of public works and a fire and police board are named by the governor of the state, and these boards have the appointment of all the membership of departments under their supervision, the city council supplying the necessary funds to carry out the work. An effort will be made in the forthcoming legislature to take the appointing power out of the hands of the governor and rest it in the hands of the mayor. The present plan has not proven satisfactory and has been the object of almost continuous contention.

The present mayor of the city, T. S. McMurray, is a strictly business official. Previous to his election as mayor he was president of the board of supervisors, and

A. H. Pickens is the city auditor, and his last annual report was the most comprehensive ever issued.

Peter O'Brian, the city engineer, was, for many years previous to his election to the office he now holds, surveyor of Arapahoe County, in which the city of Denver is located. He is accurate and thorough in everything he does, and is a very popular official.

The city attorney is F. A. Williams, who is now serving his second term of office.

The board of public works, which has charge of public improvements, consists of Edward Monash, president; W. W. Booth and George C. Norris.

The fire and police board consists of D. C. Webber, president; A. W. Hogle and Charles F. Wilson.

The population of Denver is estimated at 150,000 at the present time. The city has an area of 44½ square



miles, which is being added to by the annexation of suburban towns.

The tax rate, on assessed value, is 11.2 mills on the dollar, and the assessed valuation is about one-half the actual value. The assessed valuation for 1896, including personal property and real estate, is \$72,688,146. The city's public debt is \$2,012,300, of which \$1,745,800 is public improvement bonds, and \$266,500 water bonds. The total annual receipts for 1895 were \$783,295.15, including taxes, \$589,700.73; liquor license, \$207,420; fines, \$9,429.15; sinking fund, \$139,000. No more city bonds can be issued until after the city election in April of next year. The limitation of bonded indebtedness is three per cent. of the valuation next preceeding the last valuation. Sewer and paving bonds are issued from



54 CITY HALL, DENVER.

time to time, but are liens only upon the property of the district benefitted. They run on or before eight years and pay six per cent. interest. Most of the city bonds pay four to six per cent.

The city has 11.09 miles of asphalt pavement and 2.18 miles of stone block pavement. The total cost of the pavement was \$1,285,218.34. The asphalt is kept in repair by the contractor for five years. The annual cost of cleaning the paved streets is \$12,000, and the unpaved streets cost \$36,000. Sprinkling is done at a cost of \$38,000 to \$42,000 a year. A large amount of street grading and paving is in contemplation for the coming year.

The police department, of which J. L. Russell is chief, costs \$113,000 per annum, excluding supplies and repairs. It consists of ninety-six men, of whom fifty-nine are patrolmen. The salaries are: chief of police, \$208.33 per month; captains, \$125; patrolmen, \$70 to \$85.

The annual cost of the fire department is \$121,000, excluding supplies and repairs; the number of men in the department is 110. There are thirteen fire department houses, and the department consists of twelve wagons, three hook-and-ladder trucks, two chemical engines, seven engines and sixty-three horses. The monthly salary of the chief, Julius Pearse, is \$208.33; assistants, \$125, and firemen, \$75 to \$85. The number of alarms for 1895 was 410, and the loss, \$242,255.62; insurance paid, \$232,633.32.

Denver has nine parks, comprising a total area of 510 acres, of which 250 acres are unimproved. The largest of these is the City Park, on which extensive improvements are now under way, making it a model of its kind. The park appropriations for the past year were \$65,000, and the cost of maintaining the parks for 1895 was \$54,905.77. Seventy-five persons are employed.

The park commission is appointed by the mayor and consists of John C. Gallup, president; Charles Hallack and A. C. Dake.

Band concerts are given every Sunday through the summer months. In the City Park there is a third-mile bicycle track and a half-mile horse track, and a lake for boating. A handsome, new pavillion has been constructed which will be used for picnic parties, dancing and skating.

The health department is one in which the citizens of Denver take a commendable pride. It is presided over by Dr. W. P. Munn, under appointment by the mayor. The cost for the year 1895, including garbage removal and alley cleaning, was \$47,000. The removal of garbage is let by contract at a cost of \$4,800. The number of regular employees of the department is forty. The death rate for 1895 was 11.22 per thousand. Number of contagious diseases reported in 1895: diphtheria, 248; deaths, 40; scarlet fever, 627; deaths, 105; typhoid fever, 200; deaths, 43. The total number of deaths in 1895 was 1,626, the lowest mortality in any one year since 1887. The highest mark reached was in 1890, when there were 2,530 deaths. Since that time, owing to better sewerage, modern sanitary administration and more attention to street cleaning, there has been a gradual decline in the number of deaths. In 1890 there were 287 deaths from typhoid fever, while in 1895 there were only 43. Pulmonary tuberculosis is also a fruitful cause of death; this city being the Mecca of hundreds of persons from the East in the last stages of that disease.

There are two public libraries. One, called the Public library, has 31,925 volumes, with a circulation of 262,690. The cost of maintaining it is \$9,089.61. The City library has 29,000 volumes, with a circulation of 147,076. The cost of its maintenance in 1895 was \$9,267.81.

There are 174 miles of sanitary sewers in operation, constructed at a cost of \$2,074,590.84. The streets are lighted with arc lamps only, operated by a private corporation. There are 816 street lamps suspended at street intersections. They are standard 2,000-candle-power

Brush and Thomson-Houston, and the annual cost to the city is \$91,000, the rate being \$10 per month per lamp, and the lighting of the city buildings being included in the total.

The water-works is in the hands of a private corporation. The charge for fire hydrants is \$35 per annum, each, with a pressure of 40 to 90 pounds. Water to flush sewers and sprinkle streets is free.

The city hall, a large and somewhat imposing building, is located at the corner of Fourteenth and Lorimer streets. It occupies ten lots and was built of lava stone at a cost of \$250,000.

The present members of the board of supervisors are: Chas. L. Burpee, president; Julius F. Schmidt, Orlando B. Scobey, Abram Buckton, Chas. S. Phister.

The board of aldermen consists of John H. Flatray, president; J. J. Dunagan, John D. Ross, James N. Doyle, Peter Fidel, J. A. Heister, J. B. Emery, Willard L. Ames, A. R. Young, Louis F. Bartels, Daniel Hingley, A. Lathan, J. A. Sewall and John E. Leet.

#### PUBLIC WORK METHODS.

BY CHARLES CARROLL BROWN, CHAIRMAN OF COMMITTEE  
ON CITY GOVERNMENT AND LEGISLATION OF THE  
AM. SOCIETY OF MUNICIPAL IMPROVEMENTS.

The report of the committee on city government and legislation of the American Society of Municipal Improvements, at the recent convention, was confined to the discussion of the personnel and duties of boards of public works in cities of medium size.

With reference to the appointment of heads of departments and their tenure of office, examples were given of several methods, of which the underlying principles were shown to be: First, individual responsibility of the mayor for the entire city government; second, council control; third, continuity of management of city work, and fourth, the Jacksonian principle, "to the victors belong the spoils."

Indianapolis applies the first principle quite rigorously, the mayor appointing all executive officers and boards, without confirmation by the council. As might be expected, there is a complete change once in two years. Local conditions have made continuity of place in public works an absolute necessity, so that the success of the method has been greater than it deserves. In some smaller cities the same plan is followed, excepting that confirmation by council is required and responsibility is thereby divided. A third system, probably more common than any other, is that in which the members of the board are appointed for definite periods of time, subject to approval of council. In St. Louis they are appointed at the middle of the mayor's term (four years) for a term of four years. In Omaha and Milwaukee they are appointed one each year for terms of three years. The Omaha board is, however, only the instrument of the council, as it has no powers except to carry out the orders of the city council.

With reference to the composition of the board and the division of the work, examples were given. The Indianapolis board acts as a whole, its orders being carried out

in detail by the city engineer, street commissioner and other employees. The board usually consists of business men, sometimes an architect or an engineer being included. In St. Louis each member is supposed to be an expert in his particular line—water, sewer, street, harbor and wharf and park—and has entire charge of the expenditure of money and supervision of contracts assigned to his department by the board as a whole and approved by the city council. In Milwaukee the board divides its work at its pleasure. The city engineer is president, has in charge the preparation of plans for all work and all matters pertaining to construction and maintenance of water-works; one member has sewers; another, harbor, docks and bridges; another, school and other public buildings. The last three members mentioned are appointed from districts, and each has charge of the street work in his own district. Omaha has a sewer commissioner, a street commissioner and a president in general charge, carrying out orders and contracts passed by the council. Cleveland has a director of public works in charge of all construction, plans being approved by the board of control and contracts let by it, council only appropriating and authorizing the expenditure of money.

As to the inception and conduct of public works there are also many methods. In Indianapolis there is no check on the board except the power of a majority of the property owners affected by a street improvement to remonstrate, and the fact that the entire administration may be overthrown at the end of its term of two years. The city pays nothing towards public improvement of streets, sidewalks or sewers, or it would be necessary to ask the council for appropriations. In St. Louis the board prepares all ordinances for public improvements, and the council cannot modify, but must accept or reject as they stand. In Milwaukee a general plan for a year's work is approved by board and council, and the board acts thereafter without reference to the council. In Omaha everything is done by the council, the city engineer preparing plans according to its orders and the board of public works supervising the construction.

In case of sewers proceedings can be taken in all cities mentioned, independent of property owners, but in Milwaukee the excess of cost over \$1.60 a foot, street intersections and catch basins must be paid by the city; and in Cleveland the excess over \$2 a foot must be paid by the sewer district, of which there are seventeen in the city. In case of paving there is more diversity of procedure. Paving and repaving in Indianapolis are carried through by the board without reference to council, unless a majority of the property owners resident on the street remonstrate at the proper time, in which case the matter can be referred to the council, and if it supports the board by a vote of two-thirds the improvement can still be made. In Milwaukee the council establishes the street grade, which can only be changed after considerable trouble and assessment of benefits and damages, in which petitioners are not entitled to damages. All the aldermen of the wards in which the street is located and two-thirds of the council must be in favor of the change. Paving is done by the board when determined upon by it in conjunction with the aldermen of the ward and approved by the coun-



cil. Repairs, maintenance and repaving have heretofore been paid for by the city, but recent legislation assesses on this property the cost of repaving to a total cost of \$3 a square yard for the area in front of the property for original and new pavement, the excess to be paid by the city. Petitions for new pavement were formerly necessary, but can now be obviated by special proceedings approved by a special council committee and the council as a whole. St. Louis proceeds without petition, but the city must pay the excess of any assessment over 25 per cent. of the assessed valuation of the abutting property. In Omaha the city council establishes the grade, declares the necessity of grading, assesses the benefits and damages, levies the amount of damages as a tax on the abutting property, grades on a contract let by the board and approved by the council, and assesses the cost of grading. If the city pays half the cost no petition is necessary; otherwise a petition from three-fifths the property frontage is necessary. Petition is necessary for change of grade, and a series of ordinances similar to that for establishing the grade. Paving is done on petition of a majority of the frontage, and the property owners have thirty days after passage of ordinance declaring necessity of paving to select material for pavement, bids being received on all proposed kinds of material for the information of bidders. If not selected by property owners the council selects the material and the board lets the contract on the material selected, contract and plans being approved by the board. In Cleveland pavements are laid without petition if board of control and council recommend. One-half the cost of repaving is paid by the city. Sidewalks are usually left to the property owners, but in Indianapolis are treated the same as street pavements, and in Milwaukee are taken care of by the board of public works at property owners' expense. The same is theoretically true in Omaha, but practically, except for repairs of wooden sidewalks, the property owner is very nearly free to do as he pleases. Cleveland is in about the same condition.

Sweeping of paved streets is now done at public expense in Indianapolis, Milwaukee, Omaha and Cleveland. Street sprinkling is done at heavy public expense in Milwaukee, may be assessed on abutting property in Omaha, without petition, and is done and assessed against abutting property, upon petition, in Indianapolis.

Milwaukee has a civil service law, with a board of civil service commissioners, chief examiner, secretary, full and practical rules, and the class and standing of employees has been greatly elevated. Indianapolis has an indefinite provision, considered mandatory by one administration and ignored by others. When applied it produced a marked improvement in the service.

The time from beginning of proceedings for an improvement to the close and the amount of form varies much. Indianapolis is simplest, with a resolution of the board, including the plan and specifications adopted; for example, April 3, published April 4 and 11, remonstrances called for on April 20, ten days for filing of remonstrances from resident property owners; advertisement for bids May 4 and 11, bids received May 15, bond of contractors approved May 20, pavement 2,396 feet long, 10,751

square yards of asphalt, completed, and assessment roll approved by the board August 24. For sewer resolutions this time is reduced ten days, as no remonstrance from resident property owners is provided for. Omaha has a long list of ordinances as indicated above, especially if grading must first be done. For the last pavement laid the petition was presented August 26, 1894; first ordinance passed, September 27; contract could have been approved November 7, but was delayed by litigation to January 22, 1895; final estimate, October 25, and ordinance making tax levy, after passing through board of equalization, was passed January 23, 1896. Cincinnati takes twenty-one steps, beginning, for example, April 7, contract approved December 12, assessing ordinance passed February 26.

Indianapolis takes four to six weeks to letting of contract, and one resolution, including plans and specifications, one contract and one assessment roll. Omaha takes from two months to two years, especially if grading and curbing are necessary; not less than four ordinances for paving, plans and specifications, contract, assessment roll, approvals by board of equalization and council, and for grading and curbing, possibly as many as ten or twelve ordinances, three contracts, three assessment rolls, approvals of boards, appraisers, etc. Cincinnati takes nearly ten months at the least, two resolutions of board, three ordinances, plans and specifications, contract and assessment rolls.

The committee recommends terms of four to six years for mayors, possibly without eligibility to immediate reelection, and annual appointments of members of board, not more than one-third the membership to be changed each year. Where the city is large enough they recommend placing of engineers or experts in charge of various departments, the heads to act as a board, as in St. Louis. Where the work is not so extensive they recommend that the city engineer be the president of the board, as in Milwaukee, continuity of policy and management being the great principle to follow. Practical civil service regulations will aid in securing honest and capable employees; regulations that will not eliminate all personal element by an inflexible system of examinations and appointments thereunder, which, in its strict application, is the death of all progress in the direction of non-partisan appointments, because it is so obnoxious in many of its features, and fails to secure the results desired, being too apt to give the offices to unpractical men who are better with their pens or tongues than in doing the practical work to be assigned; but regulations which will give some flexibility to the examinations, so that the applicant may have an opportunity to show his capabilities in the best way, and rules for appointment which will give opportunity for honest selection of the practical man from among those with sufficient knowledge.

As to carrying on public work, it is recommended that the independence of the Indianapolis board be approached as nearly as possible, but as that board has no check except its uncertain tenure of office, a permanent board, such as is recommended, must have some restraining power. The St. Louis method is excellent, the council having the power to approve or reject, but not to modify.

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## NOTE AND COMMENT.

The greatest value of a business administration of municipal affairs consists, perhaps, in the smaller reforms and economies which it effects. The saving to a municipality and the corresponding benefit to the people that result from the adoption of thorough business methods in every department are beyond calculation. An indication of the value of good business methods is furnished by a comparison of the expenditures for a single item under Mayor Strong, of New York, and under the Tammany regime. Stationery and printing is one of the smaller items in a municipality's expenditures, yet it is one in which Mayor Strong was able to effect a saving of \$70,000, as compared with the cost under Tammany management. This saving was effected despite an increase in the quantity required. The following table shows the difference between certain expenses for 1895, a year for which Tammany appropriated, and the corresponding expense for 1896:

	1895	1896
Printing and lithographing.....	\$32,830.00	\$23,047.06
Books.....	40,068.71	21,476.26
City Record.....	72,000.00	47,000.00
Stationery.....	34,415.45	18,188.61
Totals.....	\$179,314.16	\$109,661.93

The following table shows the cost of books for the city departments for the past three years:

	No. of Books required.	Cost.
1894.....	18,585.....	\$45,418.65
1895.....	19,223.....	40,068.71
1896.....	25,186.....	21,476.26

The showing in favor of Mayor Strong's administration is doubly significant from the fact that the firm doing most of the work was the same under both administrations, which makes it conclusive that the former officials could have effected the same saving had they possessed the disposition or the business ability to do so.

The select council of Erie, Pa., has taken unto itself a new duty—that of censor of the local press. Some of the councilmen, having been mildly criticised in the newspapers, retaliated by passing a resolution to close the council doors upon the reporters of any paper that should so shock their sensitive natures in the future. We would suggest to the Erie councilmen that state laws amply protect them against unwarranted newspaper stories, and that just criticism can be best avoided by discharging their duties honestly, openly and above board. Nothing is to be gained by locking the doors of a public chamber.

From the far West comes an example in municipal retrenchment that is worthy of emulation by many of the debt-ridden cities of the East. The council of Helena, Mont., has started the new year by cutting expenses in every direction. The aldermen have even resolved to cut off their own fees of \$5 each for every session. The salaries of all the heads of departments have been materially reduced and the fire and police forces have been cut down in numbers. A contingent fund has been provided for, out of which cash is to be paid for everything the city buys. By paying cash the city will be enabled to get its supplies at lower prices than prevailed under the old warrant system. Aldermen who act like this are scarce and they should be kept in office.

Last month we noted the fact that citizens of New York City found it necessary to invoke the aid of the court to prevent the board of aldermen from giving away a valuable franchise to a gas company. This month there is a similar case at Omaha, where citizens have considered it necessary to seek an injunction to restrain the council from making a notoriously bad contract with the water company. Is it possible that some American cities have at last reached that stage of degeneration where government by injunction is necessary?

The Omaha Water Company pretends to have a franchise running until 1900, and in that year the city has an option to purchase the plant. The council recently passed a resolution extending the franchise to 1907 and Mayor W. J. Broatch vetoed it. The mayor's veto message, which is published in another column of this paper, is a carefully prepared and able document, showing conclusively that the council has no moral right or just reason to grant the water company any concessions whatever.



This message, drawn to protect the interests of the public against those of the water company, was refused publication in the two daily newspapers of Omaha, whereupon the mayor had 5,000 copies of it printed in pamphlet form and circulated among the taxpayers. At a subsequent meeting of the council the veto was sustained. One of the most reprehensible features of the case is the refusal of the daily newspapers to give publicity to Mayor Broatch's veto. A daily newspaper should be the alert and constant protector of the public, the unremitting foe to corruption and a medium for giving publicity to all matters in which there can be any public interest, and when it fails to publish an important public document like Mayor Broatch's veto message it deservedly loses any influence it may have.

What appears to be an exceptionally good contract for street lighting has been made by Salt Lake City. The city has just granted to the Utah Power Company a franchise, by the terms of which the company secures the right to construct and maintain poles and wires on all the streets of the city for the purpose of distributing electric currents for light, heat and power, and, in return for these rights, agrees to provide the city with all poles and cross-arms necessary for the accommodation of 400 arc lamps and the equivalent of 300 horse-power in electric energy, or so much thereof as the city may deem necessary, for street lighting at the rate of \$25 per annum for each horse-power. The franchise makes the company liable for all damage claims arising from the operation of the plant and in other ways fully protects the interest of the city.

Salt Lake City now pays \$102 per lamp, 2,000 c.-p., per year, on moonlight schedule. Under the new arrangement it is estimated that the city will get lamps of 2,000 c.-p., all night, at less than \$55. Among other advantages gained by the city are:

1. It incurs no expense or risk in developing either steam or water power.
2. It neither owns nor provides any apparatus, except wires, lamps and controlling appliances.
3. It avoids the investment otherwise necessary for a central station, such as expensive buildings, boilers, engines, dynamos and pole line, together with expense of depreciation, interest, insurance and operation, as well as the responsibility and liability of loss through incompetent superintendence, accidents or carelessness.
4. The cost of power is a fixed sum, and the risk of being deprived of light, through fire or other cause, is no greater than if the city owned its own plant.
5. It secures a pole line without cost, upon which it may compel every other electric company, whether power, light, telephone or telegraph, to place their wires, and thus remove from the streets the present unsightly poles, of which there are in many cases thirty to the block. The number of poles provided for in the new franchise is seven to each block, including street intersections.

—Seventeen thousand yards of brick pavement, on concrete foundation, was recently laid in Cherokee street, Leavenworth, Kas.

## CAR TRACKS AND PAVEMENTS.

BY JAMES OWEN, C. E., NEWARK, N. J.

The present enormous development of transit facilities in the streets of urban and suburban communities, and the desire for immediate results rather than for permanent construction, have already led to complications and problems which demand the careful study of the engineering profession, and to which more particular attention in the future will have to be given.

In the construction and maintenance of streets and highways certain principles have been formulated, and by selection accepted as giving the best results, economically, for the particular travel they have to endure. In the maintenance of railroad tracks the practice has been crystallized and a standard has been adopted from which only the lack of means excuses a departure.

These practices exercised separately offer no field of discussion, but as soon as the maintenance of track and that of pavement are united in one street or in one city, then the relations of the two interests become complex, and the economic adjustment of the differences between the parties interested opens up a wide field of discussion in what may be called at present, at least, an undeveloped territory, and in which, therefore, it may not be considered improper to inject a few suggestions.

The first point to be considered is the relation of the owner of the railway to the authorities in charge of the highway, and involves so far three situations:

First—Where the municipality owns both track and street.

Second—Where the company operating the railroad assumes as part of its franchise the care of the pavement in the street.

Third—Where the municipality cares for the pavement outside the tracks, and the company cares for the track and the pavement between the rails.

While the first two conditions actually exist, they are so rare in this country that much consideration cannot be given to them, except as to formulate what, in some minds, might be called the ideal. They have only been adopted in isolated cases, under peculiar conditions, and do not seem to commend themselves generally to municipalities or capitalists.

It will not be out of order, however, to allude to two or three ideas that suggest themselves on these two heads. It would be of undoubted advantage to have the control of track and pavement vested in one authority, as more economic results can be obtained and the riding public and driving public would both be placed on a fairly equal basis; but the general unsatisfactory administration of municipal affairs at this time places a barrier against municipal control. On the other hand, when the railroad company assumes control of the whole pavement of the street, the company, as a money-making institution, would not have as high an idea of the character of a good pavement as the critical taxpayers would demand, and when repairs are numerous and costly, they may not be made with the alacrity that a high citizenship would suggest.

Another condition of things might exist where the mu-

nicipality keeps the whole pavement in repair and collects from the company the cost of the latter's part between the tracks. This might work satisfactorily if one point did not come up to create trouble; it is the one point that is going to make endless friction, and is the unconsidered element, viz.: the repairing and renewing of the track itself.

Assuming, then, that existing condition, and for a while the future condition, is the separation of the control of the pavement from the control of the track, it will be in order to consider the relations thereto in a purely engineering sense, and from this consideration arise certain governing principles which may be of benefit to both parties concerned. As a basis for these relations it will be proper also to assume that the workmanship of both pavement and track are perfect, considering that any departure from this standard of perfection would only aggravate the difficulties.

The construction and operation of a horse railroad on a street or highway, while to a certain extent separating the vehicular travel from the track itself to the area left on either side or between the rails, does not by any means isolate it; and it is a matter of history that rails were especially designed to keep the wagon travel away from the car tracks, and it may be fairly assumed that the car travel was a component part of the general travel. With the introduction, however, of a higher rate of speed, either by cable or electricity, the result has been, first, to increase enormously the travel on the cars, so much so that in many cities the main car lines have practically driven away the wheel travel, and, second, the wheel travel has been forced into the two driveways and only in an emergency is the track space used.

The result to the pavements on the streets is that the travel on them is localized into two narrow lines on which the wear is peculiarly excessive, leaving the space between the tracks rarely used. To compensate this to a certain extent is the fact that rapid surface street transit has decreased to a large extent horse travel, and also has driven a portion of the said travel on to other streets. The effect of this localization of travel on parallel lines to the track is to induce excessive wear in certain spots and but little in others. The sequence to this, of course, is more frequent renewals in pavements, to preserve uniformity.

It is not in the scope of these remarks to allude to the merits and demerits of any particular pavement, but to appreciate the situation properly the accepted standard pavements now in use should be stated, and they are granite block, asphalt, brick, telford and macadam. The various cities in the country have or are making experimental departures into other classes, but the list given above can be considered unchallenged. Of the pavements mentioned the accepted practice is to lay the first three on a bed of concrete, and in many cases this concrete is continued between the tracks, and in it the ties are imbedded. In the telford and macadam street the spaces between the tracks are paved with block, with an edging of block outside the rails to keep the broken stone surfacing away from the rails.

Into these pavements are injected the car tracks, with, as a rule, small ties laid far apart on the bare ground,

with a heavy girder rail spiked to them, and tie rods every few feet. On tracks of this character loads are carried practically equal to those on steam railroads. The practice of maintenance of track on steam railroads is so matured that allusion to it here would be superfluous, but it is safe to say that every salient requirement of steam railroad track work, except the rails themselves, has been carefully ignored in street railroad track. This is due, as far as the author's observation goes, to these causes: Extreme haste in the construction of the work, lack of appreciation of the future use and requirements of the road, and probably, also, to lack of funds.

This situation is, then, to be faced: A carefully laid pavement, designed with one object particularly, viz., permanency; intermingled with it is a perishable construction requiring repairs, incessant and immediate. A prominent street railroad superintendent is credited with the statement that every street railroad track will on an average have to be renewed every ten years. While this statement may be criticised, there is good reason to believe in its accuracy.

Assuming for argument that the ten-year period is correct, the fact that every square yard of pavement within the limits of the track and also to the outer edge of the tie will have to be torn up and relaid every ten years opens up a field of speculation as to the proper practice to be adopted, both for tracks and pavement, in the future, to preserve an ideal in both cases.

Taking the case of a block pavement laid on a concrete bed, with every tie imbedded in the concrete, the actual cost of removing the material is a large item. Relaying is costly, and will sufficient care and watchfulness be given to insure a homogeneous structure afterward? Experience is apt to point otherwise. If concrete is not used between the tracks, the pavement itself will not be permanent and will require continuous repairs to keep it up to standard, and this standard will be achieved only with great difficulty. This same argument will apply both to asphalt and brick. In the last year more attention has been given to this question of permanency in tracks, and the use of sixty-foot rails and welded joints is to be greatly commended; but a track spiked to wooden ties laid on soft earth can never be deemed permanent, and the adoption of a track laid in concrete itself is a matter to be considered carefully. There have been for years earnest advocates of this method, and patents have been granted for such practice; but so far it has never commended itself strongly to that branch of the profession. It can be readily seen that rails with welded joints, firmly laid in concrete and superimposed on this a pavement also laid in concrete, would be the desideratum, provided it can be proved that such construction of itself is inherently correct.

The substitution of steel ties for wood laid in concrete also suggests itself, and it would be futile to go into the region of speculation; but it is proper to insist that a practically permanent track is to be desired, on the part of the public, for the good condition of the pavements. It must also be desired by the operating company on the score of economy, and, with a common end in view, it is natural to assume that before long both parties interested



will work together. The foregoing remarks apply to streets of cities where there is a systematic practice of having good pavements, and with a corresponding desire to keep them so. In others, where there is indifference and even negligence on the subject, the railroad companies, as a business operation, will keep their tracks in fair condition, but the streets themselves will become practically useless for travelling.

In the relation of pavements to tracks in suburban and rural sections the problem encountered is different in character but none the less complex, and as the future of electric propulsion will be largely in that direction a few ideas on that question will not be amiss.

The elimination of the idea of permanency as demanded for city work will first occur. No country highway, whether of earth, gravel, macadam or telford, is designed to give a permanent surface. The theory of use demands constant and incessant renewals in the surface, and breaking up and relaying the pavements themselves need not inflict permanent injury to them. So both track and roadway can be considered purely in their economic view.

If the present practice of wooden ties be found to be the most economical, let them be laid so, even if track surfacing be constantly necessary. The only point to be insisted on is that whatever road material is taken up should be carefully relaid and cared for afterward, to obviate settlement and unevenness.

In laying tracks on suburban and country highways a few ideas suggest themselves which may be noted. The original tracks for horse cars were paved, as a rule, with cobblestones. Theoretically it gave a better footing for the horses. On the substitution of electric tracks the original cobble stones were relaid without forethought. This practice, of course, was not long tolerated, and Belgian block was substituted. It was found, however, that, except in very narrow roads, no travel ever came on the pavement except to cross it, and telford or macadam pavements were laid in the tracks, with an edging of trap-rock block against the rails. Experience showed that blocks did not wear and the macadam did. The result was that in a short time the blocks projected one or two inches above the macadam. The later practice is now to leave out the edging and use macadam entirely. This, of course, is not applicable to steep grades, as the macadam will wash out in heavy rains from the concentration of the flow by the rails.

One serious difficulty encountered in the maintenance of macadam roads along rail tracks is the localization of travel in two parallel lines about two to three feet from the outside rail, and it is found that the cost of repairs for the same distance is practically doubled, as telford roads, originally requiring attention once in two or three years, now have to be patched every year, and then with less satisfactory results.

One curious trouble found in laying the block edging against the rail on telford roads was that the sand designed to support the blocks was washed by the rains into the interstices of the foundations, letting the blocks down. Very coarse gravel and cinders used as a substitute for the sand removed the difficulty.

The concentration of travel into the parallel lines quickly caused ruts to be made, a very unusual experience to the author, and the solution of the difficulty has not yet been arrived at. Broken stone of larger size, up to three inches, is now being tried, and, so far, is an improvement, but the surface is rougher. This trouble, of course, only occurs when the tracks are in the centre and the driveways on the side. This brings up the question of the location of the tracks, and in that the practice is varied. In cities, as a rule, the centre is the only available place, and opinion is well crystallized in favor of that location; but in suburban roads the practice is varied.

On a fifty-foot roadway a twenty-foot driveway in the centre, a track on each side, and then nine feet for access to houses gives good satisfaction, preserves the driveway and lessens repairs. In a sixty-foot roadway and four-tee n-foot driveway outside the tracks all the requirements are attained. In a roadway less than fifty feet the tracks of necessity must be in the centre. Where only one track is laid on a country road the track should be on one side, with switches toward the centre.

The ideal road with trolley tracks is probably the extension of Beacon street, Brookline, Mass. One wide roadway in the centre, the trolley tracks sodded with grass, and a driveway on each side for local access give all the necessary facilities for the varying wants of the travelling public.

In the construction of Beacon street the company which owned the land opened the street, graded it, and was in sympathy, if not identical, with the trolley company. The result was perfection; but when a trolley company, the municipality and the property owners are pulling in different directions, the doctrine of perfection is difficult to inculcate.

With the unexpected and enormous increase of travel on street railways due to low fares and increased speed, and a general appreciation of the profits derived therefrom, the public has gradually increased its demands upon the traction companies for the privileges conferred. The newness of the plants has so far rendered renewals unnecessary, and repairs and the cost of such repairs have not yet been fully appreciated; so that, whether the companies will concede more to the communities or will do less in the future cannot be fully predicted. Until then no permanent status of their relations can be fixed.

However, with the constantly increasing demand and insistence upon good pavements and highways, the practice, both of track and street maintenance, is bound to receive the thought and consideration of professional men, and if these few remarks shall be conducive only to that end they will not be in vain.

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A CARD.—We have concluded to accept the Eastern agency offered us by the Muskegon Chemical Engine Company, for the sale of their chemical engines. We also wish to announce to the public that hereafter our combination hose wagons will be equipped with the chemical apparatus manufactured by this well-known and reliable concern, and there is no hesitancy on our part in saying that we know this make of chemical engines and chemical tanks to be the best on earth.

Gleason & Bailey Mfg. Co., 189 Mercer street, New York City.

## A SUPPRESSED VETO MESSAGE.

Here is a veto message by Mayor Broatch, of Omaha, which the daily newspapers of that city refused to publish. Taxpayers went into court and secured a temporary injunction to restrain the council from overriding the veto.

OMAHA, NEB., December 14, 1896.

*To the Honorable City Council of the City of Omaha:*

I herewith return, without my approval, "Concurrent Resolution Relative to the Acceptance and Approval of the Proposition of the Omaha Water Company to the city of Omaha," passed December 1st, 1896.

I am unable to perceive any substantial benefits to be derived by the city of Omaha from the adoption and approval of the resolution, but to the contrary I perceive where it may produce lasting and harmful results.

The resolution is an approval of a certain proposition made to the city council of the city of Omaha by the Omaha Water Company under date of November 24th, 1896. That proposition may be briefly stated as follows:

1. The Omaha Water Company will extend water mains as directed by the mayor and council, and place 150 water hydrants for fire protection.

2. One hundred of said hydrants, if directed by the mayor and council, shall be placed in the year 1897, twenty-five in the year 1898, and twenty-five in the year 1899, or thereafter, as may be directed.

3. The company further agrees to construct another large water pipe from Florence to Omaha, and to make other needed improvements, as the same may be found necessary.

4. For the water hydrants to be placed as above stated, the city to pay the sum of \$1.00 per year.

5. In consideration of the foregoing the city of Omaha is to surrender and postpone its right to purchase the water-works plant to July 20th, 1907.

6. If the city shall not elect to purchase the water-works plant in the year beginning July 20th, 1907, then it shall have the right to purchase in any fifth year thereafter, but not during any intervening year.

This proposition, practically considered, makes no concession to the city of Omaha, except in a reduction of hydrant rental for such hydrants as may be hereafter ordered to be placed under the terms of the proposition.

Whether the city has any real occasion for the placing of one hundred and fifty additional hydrants within the next three years is a matter of serious doubt. If there be no real necessity for the locating or the placing of the said hydrants, then nothing is to be saved to the city. The only saving to the city from the proposition that necessarily arises would be in the rental of such hydrants as the situation demands shall be located within the period of time stated, and this number would be so small that I do not deem it a very great consideration.

If the Omaha Water Company has any corporate or contract rights in the city of Omaha, it can be compelled by the city to locate such hydrants as the city's needs and demands require, and to extend its mains to connect therewith.

Furthermore, if there exists any necessity for the construction of a large water main from the pumping station at Florence to the city of Omaha, in order to furnish the city with a proper and adequate supply of water, the power to compel the water company to lay such water main already exists, and is not created by this proposition.

If it would be of any pecuniary advantage to the water company to have an additional water main, or if it be necessary for the water company to have an additional main, in order to carry a sufficient supply of water to the city of Omaha, it will

be obliged to and will construct such water main of its own volition.

It will thus be seen that the water company practically concedes nothing of importance to the city of Omaha.

The magnitude of the concession which the water company asks from the city of Omaha can best be understood from a statement of the following facts:

The Omaha Water Company is a corporation lately created under the laws of the State of Maine, which acquired the legal title to the water-works plant by a deed of conveyance from the Farmers' Loan and Trust Company as trustees, and through no conveyance or grant from the city of Omaha to this Maine corporation. It is a matter of serious doubt whether the Omaha Water Company can claim any charter or contract rights with the city of Omaha whatever. The city of Omaha has never been a party to any transaction by which the Omaha Water Company claims to have acquired title to the property or any franchise or license in the streets of the city.

The city council evidently has seriously doubted whether this Maine corporation had or could acquire any such rights or privileges, as it passed a concurrent resolution some time since directing the city attorney to take such steps as would prevent the water-works property from passing into the hands of any other person or company not having any contract rights with the city.

To that end, the city attorney began an action in the Circuit Court of the United States for the District of Nebraska, to prevent the property from passing into the hands of any new company, on the theory not only that the new company would not have a right to take possession of said property or to claim any rights under any contract with the city of Omaha, but furthermore upon the theory that the contract with the city of Omaha became forfeited and terminated the moment the property passed from the American Water-Works Company to the Omaha Water Company, which the city had in no manner recognized as having any rights or privileges in its streets. That suit is still pending and undetermined.

The Omaha Water Company evidently felt that its rights in the city of Omaha were seriously questioned, and that whether by its purchase from the Farmers' Loan and Trust Company it had acquired any right to the possession of the property, or whether the contract with the city had become forfeited and the title to such property vested in the city of Omaha, under the terms of Section II. of the ordinance granting the franchise, was a question involved in the pending litigation above referred to.

It will thus be seen that it was of the greatest concern to the Omaha Water Company that it should have the city take such action as would operate as a waiver of such claim of forfeiture upon the part of the city, and which would further operate to recognize the existence of the contract with this new company.

While the title to its property was thus in jeopardy, it is not surprising that the new company should be willing to make such a small and trivial concession as is involved in its proposition, in order to acquire an admitted title to its property, and a further recognition of the continued existence of the franchise and contract to it.

The proposition involves another important consideration. It admits by its recitals that even though the property had not become forfeited to the city, and even though it had a right to a franchise in the city, that the city of Omaha had a right under the terms of the franchise and contract to purchase the water-works plant in the year beginning July 20, 1900. It desires that the city shall waive and postpone its right to acquire title to this property by purchase in the first instance to the year 1907, and then further provides that if the city shall not purchase the property during that particular year, then it shall further waive and postpone its right to acquire title to the prop-



erty by purchase until the fifth year thereafter, and that then in the event that the city shall fail to purchase said property in the said fifth year mentioned, then there shall be a further waiver and postponement to the next fifth year thereafter, and so on, *ad infinitum*.

It will thus be seen that the proposition involves what is practically the granting of a perpetual franchise or license.

As a general proposition, it is now conceded to be good economic policy for municipalities to own their water plants.

If it be true, as may be urged, that the city of Omaha is not in a condition to purchase the water plant at the present time, that fact furnishes no argument in favor of accepting the proposition of the water company.

The time for purchase is not until the year 1900. The present city government cannot say that the city government in 1900 may not find the conditions such that it can then purchase the property. The present mayor and council should not thus forestall the right of action by the mayor and council of the year 1900, or of the years following thereafter.

Under the present franchise the right of purchase, after it shall begin to run in the year 1900, continues to run from year to year thereafter; in other words, the right to purchase remains a continuing right to purchase after that date.

The present proposition of the water company is not only to cut off the right of purchase in the year 1900, but is to cut off the right of purchase in any year following thereafter except during the specified years named in the proposition, to wit, 1907 and each fifth year after 1907.

The inevitable result of accepting the proposition of the Omaha Water Company is to barter away the right of the city to purchase the property, if it should desire so to do, for an indefinite period of time.

It is not an unreasonable expectation nor a vain hope that the city of Omaha shall have gotten back to prosperity by the year 1900, and shall thereafter continue and remain a prosperous city, and if such should come to pass, it will be in a condition where it will be desirable and expedient for it to become the owner of the water plant.

The circulars issued by the reorganization committee, which caused the formation of the Omaha Water Company, which now claims to own the property, furnish the evidence sufficient to justify the statement that the ownership of the plant by the city of Omaha would produce to it such a saving as when put into comparison with the small saving of hydrant rental proposed in the proposition, makes it a mere bagatelle. The circular contains a reported estimate of the net income to be derived from the water plant, as follows:

1897.....	\$261,000.
1898.....	265,000.
1899.....	269,000.
1900.....	273,000.

From the best information I can obtain, the actual value of the existing water plant does not exceed three millions of dollars. If the city were to own the plant and mortgage it to secure bonds to the amount of \$3,000,000 at five per cent., the interest account would be \$150,000 a year. It will thus be seen that in the years named there would be a saving as follows:

1897.....	\$111,000
1898.....	115,000
1899.....	119,000
1900.....	123,000

Taking the estimates of the committee, who now have charge and control of the Omaha Water Company, it will be seen that the city of Omaha, if it owned the plant, could save in the year

1900 and thereafter the whole amount of its hydrant rental, and the interest upon the bonded debt could be paid by the rentals derived from private consumers.

It is the right of the city to acquire title to this property and save to itself this large amount of money which is being granted away to the water company by the acceptance of its proposition, and by the approval of the resolution.

The magnitude of the interests involved, and the importance of the considerations presented, compel me to refuse to concur in the resolution, and to urge that no action shall be taken in the city council at this time which shall in any manner impair or jeopardize the rights of the city in the future.

W. J. BROATCH,  
Mayor.

#### FINANCES OF MILWAUKEE.

The total bonded indebtedness of Milwaukee on Jan. 1, 1896, was \$6,076,750. The issues of municipal bonds during the year 1896 amounted to \$815,000 and the amount of the maturing obligations retired in the same time is \$539,500, leaving outstanding bonds on Jan. 1, 1897, to the amount of \$6,352,250. The bond issues during the past year have been for the following purposes:

	Rate of Premium.	Amount of Premium.
Bridge bonds.....	\$75,000	11.76 \$8,820
Water-works.....	100,000	11.87 11,187
Refunding.....	100,000	11.87 11,187
Sewerage.....	40,000	7.00 2,800
School buildings { .....	60,000	8.00 4,800
	160,000	8.52 13,632
Parks.....	120,000	7. 8,400
Street improvement.....	160,000	6. 9,600
Total.....	\$815,000	\$70,426

The bonded indebtedness of the city is limited by constitutional provisions to an amount not exceeding 5 per cent. on the average valuation of taxable property for the five years next preceding. Whether in estimating this average the valuation for the current year, which in this case will be 1897, can be included instead of 1892, is a question upon which legal authorities differ. The following statement shows the amount available for additional bond issues in 1897, based upon an average of the valuation of 1892-1896:

	Taxable Valuation.
1892.....	\$123,929,164
1893.....	135,884,570
1894.....	142,926,395
1895.....	142,078,753
1896.....	143,771,619
Total for five years.....	\$688,590,501
Average yearly valuation.....	137,718,100
Available limit bonded indebtedness (being 5 per cent. on \$137,718,100).....	\$6,885,900
Bonds outstanding Jan. 1, 1897.....	6,352,250
Apparent margin Jan. 1, 1897.....	\$533,650
To be retired before July 1, 1897.....	484,250
Available for further issues July 1, 1897.....	\$1,017,900

If the average taxable valuations for the five years from 1893 to 1897 inclusive is adopted as a basis, the available margin for new bond issues will be increased in the sum of \$198,429, making the total \$1,216,329, instead of \$1,017,900. The question is not very material in effect, as the policy of the public debt commissioners has

always been to restrict the indebtedness several hundred thousand dollars within the possible limit. An issue of library and museum building bonds to the amount of \$200,000 has already been authorized, leaving the sum unquestionably available, \$817,900.

The income of the municipal government during the year 1896 was derived from the following sources:

From general taxation.....	\$2,479,585.95
From license moneys .....	425,000.00
From sale of bonds and premiums.....	885,426.00
From special assessments.....	397,731.18

Total.....\$4,187,743.13

In addition to the taxes levied for municipal purposes the state tax for the common school fund was \$226,713.55 and the county tax \$701,573.39.

#### PROVIDENCE FINANCIAL STATEMENT.

The fiscal year of the city of Providence, R. I., closed September 30, 1896. The total expenditures for the year, ordinary and extraordinary, amounted to \$7,011,187.97. For the last previous year (fiscal) the total expenditures, ordinary and extraordinary, amounted to \$9,424,770.73. A comparison of the totals for the two years shows:

	1896.	1895.
Ordinary expenses.....	\$3,774,902 54	\$3,742,905 21
Extraordinary expenses .....	3,236,285 43	5,681,865 52
Total.....	\$7,011,187 97	\$9,424,770 73

As will be seen the ordinary expenses have not varied to any large amount. The extraordinary expenses, however, show a large decrease in 1896 as compared with 1895. This is due almost entirely to the operations of the loan account. If the loan account is eliminated from the statement it would show no great difference in the expenditures for the two years. Without the loan account the statement would read as follows:

	1896.	1895.
Ordinary expenses.....	\$3,774,902 54	\$3,742,905 21
Extraordinary expenses .....	1,429,212 65	1,455,766 27
Total.....	\$5,204,115 19	\$5,198,671 48

The extraordinary expenses, outside the loan account, have been for the following purposes:

	1896.	1895.
Sewer construction.....	\$389,683 94	\$496,939 28
School sites and buildings.....	268,357 35	88,308 87
Streets and bridges.....	288,449 63	459,965 00
Park extensions and improve- ments.....	251,269 35	208,128 08
Water-works construction.....	126,587 21	81,775 93
Other purposes .....	104,865 17	120,649 11
Total .....	\$1,429,212 65	\$1,455,766 27

A comparison of ordinary expenses of departments cannot be made, without much labor, for the reason that a change in the appropriation bill for the fiscal year ended September 30, 1896, so varied the expenditures, as previously charged, as to make a detailed comparison practically impossible.

The debt of the city September 30, 1896, as compared with September 30, 1895, was as follows:

	1896.	1895.
Funded.....	\$14,196,000 00	\$13,536,000 00
Floating.....	2,336,181 10	2,221,384 27
Total .....	\$16,532,181 10	\$15,757,384 27
Less sinking funds.....	3,298,492 59	2,832,881 04
Net debt .....	\$13,233,688 51	\$12,924,503 23

The city debt represents expenditures for the following purposes:

	Funded.	Floating.
Water-works.....	\$7,000,000 00	\$110,000 00
Sewer construction.....	3,825,000 00	200,000 00
Streets and bridges.....	1,400,000 00	525,500 00
School sites and buildings...	600,000 00	312,000 00
Public improvements.....	596,000 00	421,988 15
Park extension and improv't	575,000 00	524,000 00
City hall.....	200,000 00	91,000 00
State tax .....		151,692 95
	\$14,196,000 00	\$2,336,181 10

PHILIP S. CHASE,  
City Auditor of Providence.

#### NEW YORK'S BUDGET FOR 1897.

The 1897 budget of New York City, as finally adopted by the board of estimate and apportionment, compares with that of last year as follows:

Departments.	1896.	1897.
Mayoralty.....	\$26,000 00	\$42,555 00
Common Council .....	88,000 00	91,500 00
Finance Department .....	316,400 00	321,400 00
Interest on city debt .....	5,556,597 88	5,654,258 53
State and school tax.....	6,402,009 92	5,451,110 21
Redemption of city debt....	2,989,901 60	4,172,669 35
Rents .....	168,073 77	171,352 00
Armories—Rents .....	10,250 00	2,750 00
Judgments.....	125,000 00	250,000 00
Law Department.....	205,050 00	197,550 00
Public Administrator.....	13,890 00	16,990 00
Public Works.....	3,270,530 66	3,519,556 66
Parks .....	1,219,255 00	1,333,125 00
Street improvement.....	633,000 00	779,750 00
Charities.....	1,543,417 00	1,289,942 00
Correction .....	475,999 33	471,500 00
Health Department.....	519,508 00	581,358 00
Police Department.....	5,925,410 30	6,983,939 08
Bureau of Elections.....	515,294 00	325,500 00
Street Cleaning.....	3,020,700 00	2,999,002 40
Fire Department.....	2,345,355 00	2,435,926 00
Building Department.....	265,000 00	340,785 00
Department of Taxes.....	162,520 00	170,720 00
Board of Education.....	5,679,302 59	5,931,239 00
City College.....	150,000 00	175,000 00
Normal College.....	150,000 00	150,000 00
Printing and stationery.....	277,200 00	235,000 00
Civil-service Board.....	27,500 00	30,000 00
Coroners.....	56,200 00	51,700 00
Commissioners of Accounts..	65,000 00	60,000 00
Sheriff.....	137,232 00	134,982 00
Register .....	115,250 00	129,250 00
Armories, wages, etc. ....	81,200 00	98,885 00
Jurors' fees.....	85,000 00	75,000 00
Preservation of records.....	40,280 00	40,640 00
Street and park openings....	250,000 00	756,857 90



Libraries.....	63,500 00	96,700 00
Salaries, City Courts.....	338,000 00	376,000 00
Salaries, Judiciary.....	1,427,929 73	1,489,260 00
Charitable institutions.....	1,543,301 68	1,527,051 50
Miscellaneous.....	201,712 85	521,892 60
Gross total.....	\$46,496,571 31	\$49,486,297 17
Less general fund.....	2,500,000 00	3,800,000 00
Net total.....	\$43,996,571 31	\$45,686,297 17

The increase in the amount to be raised by taxation is \$1,689,725.86, which is more than accounted for by the increase in the amounts required for the redemption of bonds and for the police department. There are other cases of increase, chiefly in the amounts allowed the departments of education and public works, but these are offset by several cases of decrease in the allowances. The principal decrease is in the amount required for state taxes, over which the board has no control, and that is presumably to be credited to the liquor tax law, which has also added a million dollars or so to the excise revenues of the city. It is not likely that this budget will cause an increase of the tax rate for the present year, for the increased value of taxable property will probably keep pace with the increased expenditures.

#### MILWAUKEE GARBAGE DISPOSAL.

The city of Milwaukee is advertising for bids for the disposal of garbage, for a garbage disposal plant fully equipped and for a site for a garbage plant. The city has for several years disposed of its garbage by the Merz system, under contract, the plant being located on the lake shore, some miles north of the city. The city has had more or less trouble with the company which has the contract, the contractors being charged with polluting the city's water supply by dumping part of the garbage into the lake instead of reducing it. Mayor Rauschenberger and Health Commissioner Kempster are now earnest advocates of the municipality acquiring and operating a garbage plant of its own. It is claimed that in this way the work could be done more cheaply and effectively. In the opinion of the health commissioner, the city should dispose of night soil, now removed by scavengers to farms in the vicinity of Milwaukee, by burning it in the same way that garbage is burned; but some of the aldermen say that the expense of hauling it to Mequon, the station where the new garbage plant is likely to be located and where the present plant is now located, would be very heavy. The plant that the city needs must have a daily capacity of at least 150 tons. It is expected, of course, that the present garbage company will set some sort of figure upon its plant, so as not to run the danger of being left with an elephant upon its hands in case the city really engages in garbage disposal as a municipal enterprise. President Gross, of the garbage company, admits that there is some profit in the business, but declares that it is small.

—Col. G. J. Griffith has presented the city of Los Angeles, Cal., with 3,000 acres of land for park purposes. The tract of land is beautifully located about a mile from the northern city boundary.

#### PHILADELPHIA APPROPRIATIONS FOR 1897.

The appropriations for the Philadelphia city departments, as finally passed by councils, are as follows:

Mayor's office.....	\$272,270
Department of Public Works.....	7,704,781
Director's Office.....	\$27,320
Ice Boats.....	32,400
Gas Bureau.....	2,997,188
Highway Bureau.....	1,246,155
Lighting Bureau.....	471,490
Street Cleaning.....	871,814
Survey Bureau.....	938,760
Water Bureau.....	1,119,654
Department of Public Safety.....	4,988,880
Director's Office.....	\$19,121
Police Bureau.....	2,513,549
Fire Bureau.....	969,251
Health Bureau.....	198,270
Electrical Bureau.....	979,480
Building Inspectors.....	49,320
Boiler Inspectors.....	16,000
Bureau City Property.....	243,889
Department of Charities and Correction.....	733,523
Bureau Charities.....	\$478,718
Bureau Correction.....	254,805
Board of Education.....	3,680,501
City Treasurer.....	4,736,698
Treasurer's Office.....	\$38,750
Interest, etc.....	3,259,222
Teachers, Aid, etc.....	16,000
Sinking Fund.....	368,860
Redemption Loan.....	1,053,866
Fairmount Park.....	541,000
County Prisons.....	154,180
Reed street.....	\$77,400
Holmesburg.....	76,740
Public Buildings.....	1,000,000
Clerks of Courts.....	38,150
Pennsylvania Nautical School.....	18,500
Commissioners' Sinking Fund.....	1,250
District Attorney.....	39,600
Register of Wills.....	43,000
City Controller.....	64,225
Recorder of Deeds.....	112,400
Port Wardens.....	18,750
Prothonotary.....	67,525
Board of Revision of Taxes.....	145,220
Coroner.....	28,900
Clerks of Councils.....	67,220
Receiver of Taxes.....	236,398
Sheriff.....	79,460
City Solicitor's Department.....	116,841
City Commissioners.....	909,721
Total.....	\$25,798,993

Last year the total of the appropriations amounted to \$24,231,858. The largest increase has been given to the department of public works, which will receive nearly a million and a quarter dollars more than in 1896. The other departments have been given smaller increases, while a few show a decrease. Nearly all of the increases were allowed to provide for improvements of a permanent character, as the finance committee did not grant a single salary increase, and created few new positions in the

different departments. The increases in the appropriations, however, represent but a fraction of the cost of the works of improvement of a permanent character which the city will undertake during the year, as they will largely be provided for out of the \$8,000,000 loan and other loans created.

#### FIGURES IN A PARLOR-CAR.

"Quite a business street," remarked an Englishman to his companion, as he looked out of the window of a parlor-car of the New York and Boston express, as it slowly drew into the station at Springfield, Mass.

The view towards the south, as the train crossed the stone arch over Main street, disclosed three-quarters of a mile of business blocks, modern and substantial in appearance, and there was that about the stores, the people, the handsome electric cars and the general bustle and activity that denoted business and prosperity.

"Quite an improvement over the stations we have seen," remarked the other and younger of the strangers, as the train came to a full stop.

The porter informed two women that they had reached Springfield, where they were to change cars and take the Connecticut River branch of the Boston and Maine Railroad for Northampton.

"This is where the United States is manufacturing its recently adopted magazine gun, and during the civil war the armory located here supplied the North with muskets. We must stop off on our return from Boston, if only for a day," remarked Mr. Bryce to his son.

Bryce, Jr., had heard of the town, for he said that Harvard and Yale had fought many famous foot-ball contests here, while the annual bicycle tournament, given by the local club, was a national event. Mr. Bryce was a prosperous London banker; business had brought him to this country and his son, just out of college, accompanied him. As the train drew out of the station a genial and gentlemanly appearing man was shown to the next chair. Mr. Bryce had just passed his son the "Financial Chronicle," dated December 26, 1896, calling his attention to the excellent financial showing made by the municipality which they were now leaving. The son read aloud the figures as given.

"Springfield's net debt, December 10, 1896, after deducting sinking funds and cash assets, was \$1,399,459, a decrease of \$84,452.40 during the year. Total funded debt, \$1,939,000; of which amount \$1,600,000 was contracted for water purposes."

"Although the water debt is large, still the water plant is a source of revenue," continued the son. "In 1896 the water receipts were \$213,533; payments for construction and maintenance, \$67,057; interest on water loans, \$96,000; balance to be credited to the sinking fund, \$50,476.

"I would give the city a good bonus and assume all debts, if they would sell the water-works and franchise," said Mr. Bryce. "The net debt (water debt and sinking funds deducted in accordance with the state law for figuring percentage) was only \$253,000 or four-tenths of one per cent. of the total valuation of \$64,416,091."

"Is the population given?" asked Mr. Bryce.

"Yes. Census of 1895, 51,534. The tax rate per thousand for 1896 was \$12.80."

"Not for all purposes," exclaimed his father.

Before his son could reply the gentleman sitting next to them apologized for intruding by saying that, as a resident of Springfield, he was only too glad to give information about his city and would say in reply to Mr. Bryce's question that the tax rate of \$12.80 covered all levies for municipal purposes, except a slight assessment for watering streets. Mr. Bryce gave the gentleman to understand that they were strangers desirous of gaining all the knowledge they could of the places through which they were passing and encouraged him to proceed.

"The average rate of taxation of Massachusetts cities and towns for the year 1896 was \$15.10, so you see our rate was very low," continued the gentleman. "You may be surprised to hear that although the state of Massachusetts is small in area it has more cities whose population exceeds 25,000 than any other state in the Union. Of the thirty-two incorporated cities, according to a reliable table compiled in 1895, our city had the lowest tax rate and the smallest percentage of indebtedness."

"Truly a remarkable showing and one that you may well feel proud of," said Mr. Bryce. "What particular line of business or manufacturing is carried on in your city?"

"We have many diversified interests, some large in their line and many that are small but prosperous. Located as Springfield is, at quite a distance from the large commercial centres, she is fast becoming the business centre for the wholesale and retail trade of western New England. Although the tenth city in population in the state, the post-office receipts are the fourth largest, while the transactions at the clearing house in amount for the year make it rank second as a banking community."

For the last ten minutes Bryce, Jr., had been making figures in his book entitled "Facts," so that he had already filled more than the allotted space for Springfield.

"Should the bonds of your city ever seek the London market, now that I am so well informed as to their value, I would have no trouble in finding an investor," said the banker.

Just then dinner was announced as ready in the dining-car at the rear, and our party of three, if not hungry, were certainly dry, and went back for refreshment.

E. T. TIFFT,  
City Treasurer of Springfield.

#### SPECIAL NOTICE.

Our patrons are requested to pay no money to agents unless they bear credentials dated the current month and signed by Clarence E. Stump or B. F. Gilkison.

James B. Brown is no longer in the employ of the City Government Pub. Co. and has no authority to solicit or accept subscriptions for this paper.



## TAXES AND FINANCE.

—The city of Dubuque, Iowa, has awarded \$360,000 4 per cent. 20-year library, school and sewer bonds, at a nominal premium, \$240,000 to Spitzer & Co., Boston, and \$120,000 to W. L. Bradley, Dubuque.

—The banking firm of Harvey Fisk & Sons has been awarded the entire lot of \$700,000 registered  $3\frac{1}{2}$  per cent. gold stock of the city of Brooklyn, at a bid of 102.47. The proposals aggregated \$3,750,000, or over five times the total issue, a circumstance unprecedented in the history of the city of Brooklyn's financial affairs.

—Salaries of Louisville city officials have been fixed as follows: Mayor, \$5,000; city attorney, \$4,000; treasurer, \$3,000; auditor, \$2,750; comptroller, \$3,500; members of board of public works, \$3,000; members of board of public safety, \$3,000; tax receiver, \$3,000; assessor, \$3,000; assistant city attorney, \$2,500; judge of city court, \$3,500.

—The city tax roll of Milwaukee, which is now in process of collection, reaches the grand total of \$3,407,872.89. Of this amount the city must pay over to the county for itself and for the state the sum of \$928,318.62. The general city taxes proper are exactly \$2,479,585.95. The special city assessments for street improvements reach the total sum of \$405,271.42.

—The 1897 budget of Savannah, Ga., amounts to \$769,250, an increase of \$24,167 over last year. The heaviest items in the budget are: Interest on bonded debt, \$170,000; police, \$80,000; fire department, \$70,000; streets and lanes, \$50,000; opening streets, \$40,000; water-works, \$32,000; paving, \$30,000; city lamps, \$29,000; water mains extension, \$12,000; and board of health, \$19,500.

—On Dec. 28th bids were opened for city of Boston bonds amounting to \$1,890,000, divided as follows: Highways construction \$500,000,  $3\frac{1}{2}$  per cent., twenty-year; parks, \$500,000,  $3\frac{1}{2}$  per cent., thirty-year; school building, \$300,000, 4 per cent., twenty-year; various municipal purposes, \$590,000, 4 per cent., ten-year. R. L. Day Blake Bros. & Co. bid \$1,944,286 for the whole, and were awarded the bonds.

—The city comptroller of Milwaukee thinks that a new market for the bonds of that city can be created. The state now is allowed to purchase city bonds, and holds some securities of this nature, but it is proposed so to amend the law as to permit the state to bid on city bonds in competition with other would-be purchasers, paying a premium that will not reduce its income from interest on such bonds below three per cent. The state gets  $2\frac{1}{2}$  per cent. from the banks in which it deposits money, and if it were allowed to bid on Milwaukee bonds, its income from money invested would be materially increased.

—The city tax levy of Milwaukee this year is \$2,479,585.95, against \$2,482,382.85 for last year. The principal items of the levy this year are as follows: Sinking fund, \$258,350.14; interest fund, \$197,079.94; general city purposes, \$750,950; sewer purposes, \$155,500; ward purposes, \$565,500; school fund, \$430,000; public museum, \$14,377.16; public library, \$35,942.90; special tax for parks and boulevards, \$71,885.81. In the amount set aside for general city purposes are the following items: Police department, \$315,000; health department, \$109,000; fire department, \$412,500; salaries, \$155,000. The state and county taxes, added to the city levy, make a grand total of \$3,407,872.89, against \$3,334,935.99 last year, an increase of 23 cents on each 1,000. There are decreases in the ward and sewerage funds and increases in the allowances for parks, schools, library and museum, and in the state and county taxes.

## FIRE AND POLICE.

—Samuel Paul has been appointed chief of police at Salt Lake City to succeed Arthur Pratt.

—The Cleveland (O.) police force has been increased by the addition of twenty patrolmen, two lieutenants and one captain.

—Henry S. Julian has been appointed chief of police at Kansas City, Mo. He is a lawyer and has never been a policeman.

—T. B. Wallace, of Allegheny, Pa., has invented a hose bridge for suspending hose across railway tracks during a fire without interfering with the running of cars.

—Charles F. Klieves has been elected chief of the fire department of Wheeling, W. Va. He is an experienced engineer and will undoubtedly fill his new position creditably.

—The annual report of the Woonsocket (R. I.) fire department shows that the disbursements during last year (1896) were \$13,231.68 for salaries and \$5,821.24 for supplies and expenses.

—The fire board of Baltimore, Md., insures the members of the department. The board recently made a contract with the Union Casualty and Surety Company, of St. Louis, at a rate of \$5.90 per man per year. The company will pay \$500 in case of death; \$500 for the loss of both arms, both legs or both eyes; \$250 for the loss of one arm, leg or eye, and \$5 per week as a sick benefit.

—Upon the suggestion of Chief John Jackson, the board of fire commissioners of St. Paul, Minn., has established a weather bureau at fire department headquarters. The bureau will be superintended by some one of the department stationed at headquarters. Records will be taken three times a day of the temperature and general weather conditions. In this way, when a fire occurs in extremely cold weather or under any adverse atmospheric conditions, there will be an official record of the fact

of the conditions under which the department was forced to labor.

—A. M. Copeland, city marshal of Springfield, Mass., in his annual report says: "During the few months that I have occupied the position of city marshal I have been strongly impressed as to the disadvantages of the practice of frequent change in the executive head of the department. All the other men of the police force occupy their places year after year, and confidently expect to retain their places during good behavior. When a new marshal is appointed, whose previous experience has not been in such lines as to give him valuable knowledge and training calculated to fit him for this position, it must be clear to any reflecting mind as to how he is likely to be regarded by the force. That they will treat him respectfully and with deference obey his orders there can be no doubt. There is the feeling on their part that while they are fixtures his term of service will be brief. All this is calculated to lessen the confidence and the respect of the force in its executive head; and this feeling is often exhibited in one way or another, with consequent detriment to the service."

#### FIRE DEPARTMENT TRAINING STABLE.

The Brooklyn fire department is to have a training stable and veterinary hospital to cost \$35,000. Of this new idea Fire Commissioner Bryant says:

A building of this sort would be a paying investment for any department in the country, but the indications are that Brooklyn will be the first to own one. At present we have no training stable and the horses we buy are pressed into active service with the result that many of them are easily injured. We buy them at an expense of, say \$150 to \$200 each and in case of injury we are compelled to auction them off. Sometimes they bring \$20 and many times less. The horses come to us from the country and are soft and unfit for the hard work they are compelled to perform, and if pressed into service without training are liable to become foundered or otherwise injured. As to the veterinary hospital, it is badly needed. The present hospital consists of two old sheds. The place is too hot in summer and too cold in winter. It is just the place to ruin valuable horses that would be as good as new if they could have a few days of good care in a stable properly ventilated and with other suitable surroundings. With our new training stables we will be able to send thoroughly trained horses out to take the places of horses sent to the hospital from the various engine and truck houses. The paint shop which is to occupy a part of the new building is also needed badly. We have the men to do the department painting, but no place where the work can be done to satisfaction. I think the investment will be one of the best ever made in the interest of the fire department.

#### WORCESTER FIRE DEPARTMENT.

The annual report of Chief E. L. Vaughn, of the Worcester (Mass.) fire department, shows that the manual force of the department consists of a chief engineer, a deputy chief, an assistant chief, 88 permanent and 99 call men. The apparatus of the department consists of 6 engines, 14 hose wagons, 3 chemical engines and 3 ladder trucks. The number of horses owned by the depart-

ment is 58. The amount of hose in the service of the department is 18,850 feet, together with 5,400 feet in the storehouse, making a total of 24,250 feet. That most important branch of the service, the fire alarm telegraph, was never in better condition than at present. The cost of the department during the past year has been as follows: Running expenses of the department, \$133,611.16; underground wires, \$3,300.15; appropriated, \$125,000; balance carried forward from 1895, \$15,054.97; revenue, \$3,008.13; total appropriation, \$143,063.10; balance unexpended, \$6,150; appropriated for new headquarters, land and building, \$175,000; expended, \$31,839.52; balance unexpended, \$93,160.48.

## LIGHT AND WATER.

—South Norwalk, Conn., has made a contract for street lighting at \$74 per arc lamp per year.

—The citizens of DuBois, Pa., have voted in favor of the municipality purchasing the water-works plant.

—St. Paul, Minn., has made a contract for gasoline lighting for the year 1897 at the rate of 98½ cents per lamp per month, contractor to furnish the burners. About 3,200 gasoline lamps are used by the city. The American Development Co., of St. Paul, got the contract.

—The city of Janesville, Wis., has recently voted on the question of issuing bonds for the purchase of the Janesville Water Company's plant. The proposition to bond the city for the purpose was defeated, 721 to 421. Only about one-fourth of the city's vote was cast.

—The proceedings of the convention of the National Street Lighting Association have been compiled by Secretary Henry Hopkins, of New Haven, and published in book form. The book contains over 200 pages, bound in cloth, and between its covers may be found a vast amount of valuable information relative to the subject of street lighting. We have been favored with a copy of this excellent publication by Secretary Hopkins, and desire to compliment him upon the ability and good judgment he has displayed in its compilation.

—The city of Rome, N. Y., owns its water system. In the past eighteen years the consumption has increased four fold, and the revenue from \$8,531.73 in 1878 to \$21,280.44 in 1896. The expense of operating in 1878 was \$3,161.65, and in 1896 only \$3,321.95. A substantial surplus has been left each year, which has been devoted to extension of mains and other improvements, all without calling once on the taxpayers. On October, 1896, the water fund had to its credit \$9,643.26, and since that time semi-annual rents amounting to \$10,000 have been received.

—The Baltimore council committee on water, C. E. Cunningham, chairman, recently visited Lawrence, Mass., to inspect the system of water filtration in use there. The water for Lawrence is drawn from the Merrimac River, into which the sewage of three cities is emptied a



few miles above Lawrence. After filtration the water is given the citizens pure and free from injurious germs. Sand filtration is the system used. The town uses four million gallons of water daily and requires  $2\frac{1}{2}$  acres of sand filtration beds. These beds cost about \$40,000 an acre. Mr. Cunningham says that as Baltimore uses about 70,000,000 gallons of water daily the same system of filtration would require about 15 acres of filtration beds, which would cost the city at least \$500,000.

#### NEW YORK LIGHTING CONTRACTS.

Contracts for lighting New York city during 1897 have been let. The number of lights furnished by each company and the price per light for each gas lamp are as follows:—

Equitable, 4,045, \$12; Standard Gas Light Company, 2,215,  $13,04\frac{1}{2}$ ; Consolidated Gas Company, 14,107, \$17.50; Central Gas Company, 1,460, \$24; Northern Gas Company, 2,667, \$28; Yonkers Gas Light Company, 799, \$28; New York and New Jersey Company, 808, \$22; 128, \$21.50, and the Welsbach Company, 47 double lights, \$47; 30 single, \$30.

The electric light contracts as awarded were, per night: Brush Company, 710, 40 cents; 92, 45 cents; Mount Morris Company, 361, 40 cents; Madison Square Company, 308, 40 cents; Manhattan Company, 241, 40 cents; Harlem Company, 209, 40 cents; Edison Company, 169, 50 cents, and the North River Company, 843, 45 cents.

The Edison Company's charge of 50 cents per night per light is for the new twin light used on Fifth avenue.

—The Municipal Register of the City of Hartford is the most complete book of its kind to reach this office. It is a volume of over 600 pages and contains, besides annual reports of the municipal departments, all the information that it is possible to compile regarding the city government. Such a work must be of incalculable value to the city officials and taxpayers of Hartford. The book was compiled and edited by Henry F. Smith, the city clerk, who has displayed remarkable ability in the work.

—Preliminary steps have been taken at Mt. Vernon, Ohio, for the construction of eastern district sewer No. 2, for storm and sanitary purposes. The main trunk of this sewer will be one mile and a half long and the laterals of about the same length. This will be the second large sewer for Mt. Vernon in four years.

—Henry Hopkins, superintendent of street lighting of New Haven, Conn., was recently re-elected for another term of two years. Mr. Hopkins is an efficient official and well deserves the compliment of a re-election. He is the secretary of the National Street Lighting Association.

—The Municipal Manual of Cleveland, Ohio, compiled by City Clerk Howard H. Burgess, is one of the best works of its kind to reach this office. It shows, in concise and convenient form, the personnel and condition of every department of the city government.

No city official should be without CITY GOVERNMENT.

—John Berwald, alderman, Davenport. Ia.

#### NOTES OF THE TRADE.

—Chelsea and Beverly, Mass., have ordered Gleason & Bailey wagons.

—Princeton, N. J., and Tuscaloosa, Ala., are the first in 1897 to order fire apparatus of Gleason & Bailey Mfg. Co.

—Flushing, N. Y., has purchased of the Gleason & Bailey Mfg. Co. a modern hose wagon with ladders attached.

—The Union Snow Plow and Wagon Co., of Stoneham, Mass., has sold one of their reversible snow plows to the city of Utica.

—The Berlin Iron Bridge Co. secured the contract for the Broad street bridge at Hartford, Conn. Their bid was \$16,510.

—Ridgefield, Conn., has bought a hook and ladder truck and a Muskegan chemical engine of the Gleason & Bailey Mfg. Co.

—M. J. Drummond, of New York, has secured the contract for supplying the District of Columbia with 100 fire hydrants and 50 street hydrants.

—Bids were opened on December 16 by the New York board of fire commissioners for one Gleason & Bailey aerial truck known as the Dederick patent.

—The Wisconsin Bridge and Iron Co., of Milwaukee, secured the contract for building the draw for the new bridge over the Fox River at Green Bay, Wis.

—The chemical engine bought by the village of Whitesboro, N. Y., from the Fire Extinguisher Co., of Chicago, successfully stood a severe test on December 22.

—Don't throw away the screw raising aerial trucks, as Gleason & Bailey announce that they can put their cable rapid hoisting attachment on to any make of aerial truck at slight expense.

—The Groton Bridge Mfg. Co., of Groton, N. Y., has the contract for the construction of the Main street steel bridge at Little Rock, Ark. The bridge will cost \$365,000 and will be completed about September 1.

—The Gamewell Company has just sold 75 fire and 25 police alarm boxes to the city of Chicago. Chief Sweine, of the Chicago fire department, is a great admirer of the Gamewell alarm system and always recommends its use.

—The Lake Erie Engineering Works, of Buffalo, furnished a pumping engine for the Buffalo water-works recently. The capacity of the engine is said to be 37,000,000 gallons a day and its operating expense is far below that of any other engine ever used by the Buffalo water department.

—Mr. W. E. Dennison, secretary of the City Street Improvement Company, of San Francisco, was a caller at this office last week. He is making a tour of the principal cities of the country for the purpose of inspecting methods of street cleaning and improvement. As Mr. Dennison is a keen observer, the city of San Francisco will doubtless profit much from his trip.

—It is a well established fact that the Seagrave patented trussed fire ladders are one-half the weight and three

times as strong as the ordinary ladder. Realizing this a large order has been placed with Seagrave & Co., of Columbus, Ohio, by the Gleason & Bailey Mfg. Co., of New York City, for one hundred thousand lineal feet of these trussed ladders, to be used on hook and ladder trucks built by the Gleason & Bailey Co.

—The Metropolitan Electric Company, of Chicago, has recently brought out a new oil filter, which is giving great satisfaction, and having a large sale. The filter is operated by pneumatic pressure, and will cleanse the oil of the minute particles of metal with which it is filled after being used, and which the ordinary filter will not touch. The Metropolitan Filter is neat, compact and durable, and will interest those having the care of large or expensive plants.

—The counties of Ocean and Monmouth, N. J., have just awarded the contract for a bridge, between Point Pleasant and Manasquan, to the Berlin Iron Bridge Co., of East Berlin, Conn. This bridge will be one of the longest highway bridges in the United States, as it is to be 1,900 feet in length. The secretary of war has ordered a draw-span constructed in this bridge, which will give two clear openings, one of 45 feet and the other of 50 feet. The Berlin Iron Bridge Co.'s contract includes the substructure as well as the superstructure for the bridge.

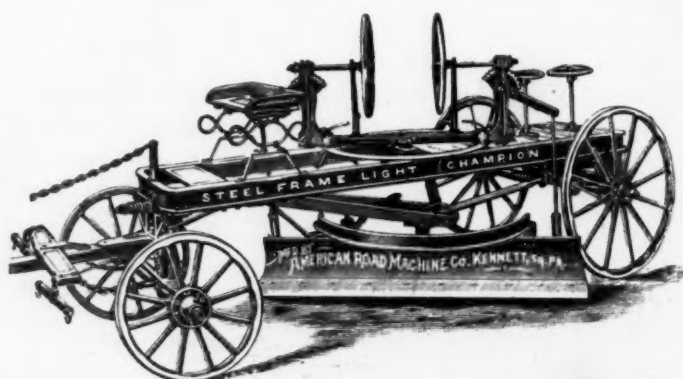
—In the line of electrical supplies the oldest house in the United States is that of the Patrick & Carter Co., of 125 South Second street, Philadelphia. This company began business in 1867 and has built up a very extensive trade and a circle of friends extending throughout the country. The house manufactures and deals in all classes of electrical goods, including fire and police telegraph supplies. City officials will always find it to their advantage to invite bids from the Patrick & Carter Co. on all electrical supplies needed for municipal use.

—The Central Manufacturing Company, of Chattanooga Tenn., are one of the largest manufacturers in the electrical field of yellow pine cross-arms, locust pins, oak pins, oak brackets and mouldings for electrical construction. They supplied the cross-arms and pins used on the Buffalo-Niagara Falls transmission line, described recently in the "Electrical Review." The cross-arms are of hard, yellow, heart pine and have been spoken of as the finest lot of cross-arms ever supplied to any pole line. The Central Manufacturing Company has at all times a large stock of its products on hand, and makes a specialty of quoting delivered prices, F. O. B. cars, in any city in the United States and in any quantity. They are one of the oldest concerns in their line in the electrical field, and have established a well-deserved reputation.

—The American Road Machine Co., of Kennett Square, Pa., has attained an enviable position in its particular field. With its long and honorable business career, with its reputation for turning out superior machinery at right prices, with its thousands of admiring patrons and with its well-merited World's Fair awards, this company must be considered really at the head of the road machine industry of the United States. To all those officials and contractors who have in their charge the improvement

and maintenance of roads and streets, we unhesitatingly say that the American Road Machine Co. is in a position to aid them. For upwards of seventeen years it has been the business of this company to study the subject of road and street improvement and to invent and manufacture the best possible machines for such work.

—It is generally admitted that the road question is one of the most important now before the people, and anything that will facilitate and cheapen the cost of good road building is worthy of general consideration. The steel champion road machine or road grader, as shown in the illustration on this page, should command the attention of all who are interested in the improvement of streets and roads. This machine consists of a steel bar suspended from trucks, and raised and lowered by means of rotary levers; these rotary levers or hand wheels are automatically self-locking, but respond very readily to the slightest pull by the hand. The main bar or blade is reversible and can be easily and quickly placed at almost



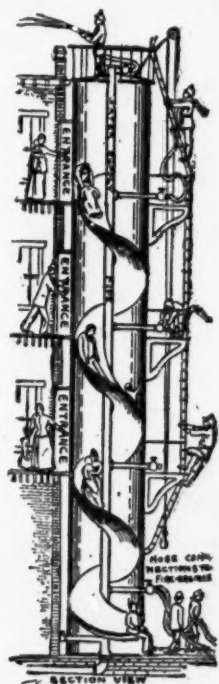
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any angle from thirteen degrees for plowing to straight across the road for levelling a roadway. By means of lateral adjustment, both front and rear, the blade can be extended outside of the line of wheels for cutting down banks, widening roadways, filling ditches, covering sewer pipes or centre drains, etc. The machine is equipped with a long rear axle, upon which the rear end of machine may be shifted laterally from side to side. This device is for the purpose of preventing side slipping when the machine is operating on the side of a road or street. The steel champion machine can be used advantageously on either earth or gravel roads, and it is frequently used on city streets for scraping the dirt and rubbish which collects on the macadam surface. It has been variously estimated that the steel champion machine will do the work of from thirty to seventy-five men with picks, shovels and hoes, and its economical value can therefore be fully appreciated by all who have ever had the work of road or street construction and repair in charge. A catalogue fully descriptive of this machine can be obtained by addressing the manufacturers, the American Road Machine Company, Kennett Square, Pa.

—City officials will be especially interested in the Kirker-Bender fire escape, because it is just the thing for school-houses, hospitals, asylums and other public buildings. It is the only fire-escape which provides for the safe and rapid exit of children and disabled persons from burning buildings, and for that reason it should be indispen-



sable to public schools, hospitals and asylums. Officials



who have in their charge such public buildings are naturally held responsible for the safety of the inmates, and this safety can be absolutely guaranteed by the use of the Kirker-Bender fire escape. These escapes have already been erected at a number of public buildings throughout the country, and they have, without exception, given perfect satisfaction. A good idea of the working of this apparatus is given in the following report by the "Daily Times," of a test made of the escape recently erected at the Sixth ward school, Oswego, N. Y.: "The fire escape is cylindrical in form, is six feet in diameter and is made of sheet steel. The chute on the interior is perfectly smooth and is so shaped that it successfully controls the speed of the body when descending. In the

centre of the escape is a 3-inch stand pipe which may be connected to the water mains by a Siamese coupling at the bottom of the apparatus. There are two entrances to the escape, one on the second story and the other on the third, both specially constructed windows. Here plugs were connected with the stand pipe at each story, and also at the top, to which a lead of hose may be attached which practically makes the apparatus a fire escape and water tower combined. A fireman's ladder has been placed on the outside of the escape which reaches to the top of the building, an endless rope for twisting up the hose to the top of the escape has also been added. This contrivance saves a great deal of valuable time which is lost in carrying hose up ladders. Promptly at 3:30 o'clock a signal was given and the electric fire alarm system which is in use in the school was set in operation. At the time the children were busily engaged at their studies, but as soon as the alarm was sounded books were laid aside and in regular order the pupils reached the fire escape landings. In a little over four minutes the six hundred pupils who were in attendance reached the ground in safety at the rate of 150 to a minute. Instead of an expression of fear upon their countenances the children were all smiles and enjoyed the fun immensely. Up the stairs to the top story they ran and down again to the great enjoyment of the large crowd surrounding the exit. The fun was not alone confined to the little ones, but Chief Engineer Eccles of the Syracuse department; Supervisor A. A. Wellington, Commissioners Cooper, Hastings, and Donahue, of the Department of Education; Clerk Lewis, of the Board of Supervisors; Dr. C. A. Sheridan and many others took the slide for life and reached terra firma in safety. The Kirker-Bender escape is manufactured by the Dow Wire Works Co., of Louisville, Ky.

CITY GOVERNMENT should be upon the desk of every city official, both legislative and ministerial. It is an educator upon the lines of improvements and reform in municipal affairs. Let the good work go forward.—Le-Roy G. Hunt, mayor, Mt. Vernon, Ohio.

#### PROPOSED MUNICIPAL LEGISLATION.

The legislature of Wisconsin began its biennial session early this month and there will be before it a great many bills affecting Milwaukee and other municipalities of the state. Mayor Rauschenberger, of Milwaukee, has urged a number of measures. In his opinion city bonds should be exempt from taxation, so as to allow residents to buy them, thus keeping the interest in the city instead of sending it East. He is also in favor of a change in the law to permit the city to issue bonds for the construction of a municipal railway, though he says that there is no prospect that the actual work will be inaugurated, under any circumstances, for several years. He advocates the repeal of the law passed in 1895 by which street-railway companies pay a percentage of their gross earnings in lieu of taxes. Milwaukee now gets \$20,000 from the street-railway lines of the city. Under a system of taxation, it is estimated, the city's income from this source would be from \$50,000 to \$60,000. The Milwaukee river has been purified by means of a flushing tunnel connected with Lake Michigan and the mayor urges a similar improvement, which, by the way, would be more costly, for the purification of the Kinnickinnic river. Mayor Rauschenberger also recommends the establishment of a system of paying taxes semi-annually, instead of annually, as at present. He would allow a small discount if the whole amount were paid at once, or add a small percentage to the deferred payment. He is also in favor of free textbooks for pupils in the public schools.

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and \$3,000,000.00 saved the first  
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LIFE INSURANCE CO.,

Post Office Square, Boston, Mass.

ASSETS, Dec. 31, 1895.	\$25,297,583.62
LIABILITIES,	23,165,543.99
	\$2,132,039.63

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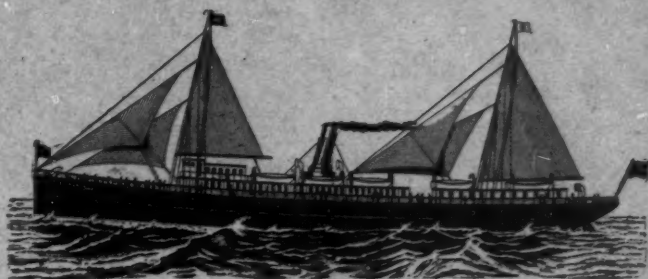
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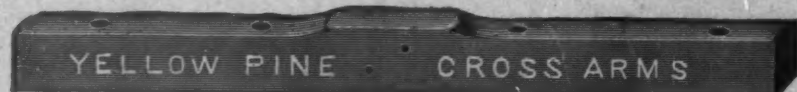
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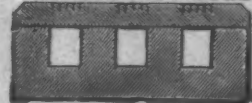
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